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ABSTRACT

A companion volume to "Scope and Sequence for Computer Education (Grades K-12)" (1984), this document outlines the goals and objectives of a school district program designed to assist students to learn to use computers and to develop positive attitudes, values, and motivation as appropriate for each individual's age, needs, and desires. After an introduction and statements of the program's philosophy and goals, a matrix format is used to outline the objectives for each grade from K to 6. The program and instructional objectives are coded to the curriculum areas of science, social studies, mathematics, and language arts; suggested software; and other resources. For grades 7 to 12, descriptions of individual courses include grade level(s), prerequisites, outlines, objectives, and type of instruction for each objective--introduction, expansion, or reinforcement. These courses are: (1) Introduction to Computers, grade 7, 4 to 9 weeks; (2) Introduction to Computer Programming, grades 7 to 8, 9 to 18 weeks; (3) Computer Fundamentals, grades 9 to 12, 1 semester; (4) Information Processing, grades 9 to 12, 1 semester; (5) BASIC 1, grades 9 to 12, 1 semester; (6) BASIC 2, grades 9 to 12, 1 semester; (7) PASCAL 1, grades 10 to 12, 1 semester; and (8) PASCAL 2, grades 10 to 12, 1 semester. The scope matrices for grades K to 12 that conclude the document correlate the objectives for each level with recommended texts, curriculum area/unit, suggested software, and other resources. (JB)

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K-12 SEQUENCE

COMPUTER EDUCATION

Anchorage School District
Division of Instruction
Curriculum Development Department

July 1985

COMPUTER EDUCATION
SCOPE AND SEQUENCE

(GRADES K-12)

Anchorage School District
Division of Instruction
Curriculum Development Department

July 1985

COMPUTER EDUCATION

PROGRAM STATEMENT

Computer skills are essential for every individual in today's technological society. Everyone needs to have the knowledge, skills, and attitudes that will enable them to effectively utilize computers. The Computer Instructional Program of the Anchorage School District will provide the opportunity for all students to learn to use computers and to develop positive attitudes, values, and motivation toward computers and their applications as appropriate for each individual's age, needs, and desires.

PROGRAM PHILOSOPHY

The Anchorage School District supports the belief that:

1. Computer skills should be integrated throughout the curriculum.
2. Computers should be used by students for both guided and independent practice.
3. Computers should be used by students to reinforce and extend the skills and concepts taught in the classroom.
4. Computers should be used by teachers to teach and/or demonstrate selected skills and concepts, to assist with record keeping and the generation of classroom materials, and to assist with diagnosis and evaluation of student learning.
5. Computers should be used to teach problem solving skills and other computer related skills such as word processing, data processing, information retrieval, business and personal finance, and programming.
6. The Computer Instructional Program needs to be viewed as a flexible program due to rapidly changing technology.

PROGRAM GOALS

- 15.1 The student is able to understand and use the vocabulary, definitions, and procedures associated with computers, their operation, and the operation of their peripherals as appropriate to needs and interests.
- 15.2 The student is able to associate computers with appropriate areas of application, effectively select and utilize application software, and apply this knowledge in solving problems.
- 15.3 The student is able to understand the nature and purpose of computer languages and programming, to develop and write computer programs as appropriate to needs and interest, and to apply this knowledge in solving problems.
- 15.4 The student is familiar with the development of computing devices; is aware of the impact of technology on society; is aware of career, vocational, home, and recreational uses of computers; displays positive attitudes towards computers; and understands the emerging roles of computers and their effective use in a changing society.

COMPUTER EDUCATION
SCOPE AND SEQUENCE

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NUMBERING OF GOALS AND OBJECTIVES

To facilitate identification of goals and objectives, each curriculum area has been assigned a number:

Science	2
Social Studies	3
Mathematics	4
Language Arts/Reading	5

Goal numbers are identified by a two-part code. Goal 2.3 refers to Science, third goal; 4.1 refers to Mathematics, first goal, etc.

Program objectives are identified by a three-part code number. Example:

5.2.3 refers to Language Arts/Reading, second goal, third program objective.

4.1.2 refers to Mathematics, first goal, second program objective.

Instructional objectives are identified by a four-part code number. Example:

3.1.5.2 refers to Social Studies, first goal, fifth program objective, second instructional objective.

INSTRUCTION SYMBOLS

Each objective has been assigned a letter which represents the type of instruction which is to take place.

<u>Symbol</u>	<u>Definition</u>
I	The skills, knowledge and/or values related to the objective are first introduced into the instructional program at this level.
E	The skills, knowledge and/or values related to the objective are expanded to provide students new insights and/or broader applications.
R	The skills, knowledge and/or values related to the objective are reviewed and reinforced at this level.

COMPUTER EDUCATION

SCOPE

FOR

KINDERGARTEN

Anchorage School District
Division of Instruction
Curriculum Development Department

July 1985

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NUMBERING OF GOALS AND OBJECTIVES

To facilitate identification of goals and objectives, each curriculum area has been assigned a number:

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INSTRUCTION SYMBOLS

Each objective has been assigned a letter which represents the type of instruction which is to take place.

Symbol

Definition

I	The skills, knowledge and/or values related to the objective are first introduced into the instructional program at this level.
E	The skills, knowledge and/or values related to the objective are expanded to provide students new insights and/or broader applications.
R	The skills, knowledge and/or values related to the objective are reviewed and reinforced at this level.

COMPUTER EDUCATION

PROGRAM STATEMENT

Computer skills are essential for every individual in today's technological society. Everyone needs to have the knowledge, skills, and attitudes that will enable them to effectively utilize computers. The Computer Instructional Program of the Anchorage School District will provide the opportunity for all students to learn to use computers and to develop positive attitudes, values, and motivation toward computers and their applications as appropriate for each individual's age, needs, and desires.

PROGRAM PHILOSOPHY

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3. Computers should be used by students to reinforce and extend the skills and concepts taught in the classroom.
4. Computers should be used by teachers to teach and/or demonstrate selected skills and concepts, to assist with record keeping and the generation of classroom materials, and to assist with diagnosis and evaluation of student learning.
5. Computers should be used to teach problem solving skills and other computer related skills such as word processing, data processing, information retrieval, business and personal finance, and programming.
6. The Computer Instructional Program needs to be viewed as a flexible program due to rapidly changing technology.

PROGRAM GOALS

- 15.1 The student is able to understand and use the vocabulary, definitions, and procedures associated with computers, their operation, and the operation of their peripherals as appropriate to needs and interests.
- 15.2 The student is able to associate computers with appropriate areas of application, effectively select and utilize application software, and apply this knowledge in solving problems.
- 15.3 The student is able to understand the nature and purpose of computer languages and programming, to develop and write computer programs as appropriate to needs and interest, and to apply this knowledge in solving problems.
- 15.4 The student is familiar with the development of computing devices; is aware of the impact of technology on society; is aware of career, vocational, home, and recreational uses of computers; displays positive attitudes towards computers; and understands the emerging roles of computers and their effective use in a changing society.

COMPUTER EDUCATION
BASIC KINDERGARTEN SKILLS

Uses computer terms such as computer, monitor, keyboard, disk drive, printer, memory, cursor, boot, menu, disk, program.

Properly and appropriately uses disks, computer, keyboard, and disk drive.

Turns computer on and off; boots and reboots disk by turning computer off and on; runs programs from a menu.

Uses a printer; uses other peripheral devices such as graphics tablet, robotic device, or programmable toy if they are available.

Uses problem solving/creative thinking programs such as E-Z Logo, Face Maker, Kidword, or Moptown Parade.

COMPUTER EDUCATION: KINDERGARTEN OBJECTIVES

CORRELATION OF OBJECTIVES

Upon completion of Kindergarten:

		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.1	COMPUTER TERMINOLOGY				
15.1.1.1	Use hardware terms such as computer, monitor, disk drive, printer, and keyboard.	I	Language Arts, Math, Science, Social Studies	Friendly Computer - MECC (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.1.2	Use names of components of a computer system such as memory.	I	Language Arts, Math, Science, Social Studies	Friendly Computer - MECC (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.1.3	Use operation terms such as cursor, boot, and menu.	I	Language Arts, Math, Science, Social Studies	Friendly Computer - MECC (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.1.4	Use software terms such as disk and program.	I	Language Arts, Math, Science, Social Studies	Friendly Computer - MECC (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.3	CARE AND HANDLING				
15.1.3.1	Handles disks carefully; properly stores disks.	I	Language Arts, Math, Science, Social Studies	Early Start-Up - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1; Hunter, Beverly. <u>My Students Use Computers</u> , Reston Pub., 1983.

* Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

COMPUTER EDUCATION: KINDERGARTEN OBJECTIVES

Upon completion of Kindergarten:

		CORRELATION OF OBJECTIVES		
	*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.3.2 Uses keyboard properly.	I	Language Arts, Math, Science, Social Studies	Early Start-Up - TIES Elementary Vol. 7 - MECC (any appropriate software)	TIES Computer Literacy Kit Step 1; Hunter, Beverly. My Student Use Computers, Reston Pub., 1983.
15.1.3.3 Uses computer properly (i.e., no jarring, bumping, or dirty hands); grounds self before using computer.	I	Language Arts, Math, Science, Social Studies	Early Start-Up - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1; Hunter, Beverly. My Student Use Computers, Reston Pub., 1983.
15.1.3.4 Uses disk drive properly.	I	Language Arts, Math, Science, Social Studies	Sticky Bear ABC - Xerox; Early Start-Up - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1; Hunter, Beverly. My Student Use Computers, Reston Pub., 1983.
15.1.4 OPERATE A COMPUTER				
15.1.4.1 Turns a computer on and off with a disk in the drive.	I	Language Arts, Math, Science, Social Studies	Early Start-Up - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.4.2 Run programs from a menu.	I	Language Arts, Math, Science, Social Studies	Elementary Vol. 7 - MECC (any appropriate software)	TIES Computer Literacy Kit Step 1

* Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

COMPUTER EDUCATION: KINDERGARTEN OBJECTIVES

Upon completion of Kindergarten:

CORRELATION OF OBJECTIVES

		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.4.3	Break out of a program and reboots disk by turning the computer off and on.	I	Language Arts, Math, Science, Social Studies	Early Start-Up - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.4.4	Is able to locate and find necessary keys to respond to questions on the screen; demonstrates correct use of RETURN, space bar, shift, ESC, and CAPS LOCK keys. NOTE: Touch typing introduced only when students begin to use a word processing program on their own.	I	Language Arts, Math, Science, Social Studies	Friendly Computer - MECC; Juggles Rainbow - Learning Co.; Letter Recognition - Hartley; Kinder Keys - TIES	TIES Computer Literacy Kit Step 1
15.1.5	PERIPHERAL DEVICES				
15.1.5.1	Uses graphics pads such as the Koala Pad.	I			Koala Pad; Power Pad
15.1.5.2	Uses a printer.	I	Language experience stories	Kidword - ASD; Magic Slate - Sunburst	
15.1.5.3	Uses robotic devices such as the LOGO turtle or programmable toys.	I	Directions, counting; Problem Solving, Creative Thinking	LOGO	Big Trak; Hunter, Beverly. <u>My Students Use Computers</u> , Reston Pub., 1983

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COMPUTER EDUCATION: KINDERGARTEN OBJECTIVES

COMPUTER EDUCATION: KINDERGARTEN OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Kindergarten:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.3.1	USE COMPUTER IN INTERACTIVE MODE				
15.3.1.1	Use introductory graphics programs such as E-Z LOGO.	I	Counting, directionality	Friendly Computer - MECC; E-Z Logo - MECC (requires Apple Logo - Apple); Kinder Comp - Spinnaker	TIES Computer Literacy Kit Step 1
15.3.1.2	Use programming readiness programs such as Face Maker or Creature Creator.	I	Problem Solving, Creative Thinking	Face Maker - Spinnaker	
15.3.1.3	Use word processing readiness programs such as Kidword or Story Machine.	I	Language Arts	Kidword - ASD; Story Machine - Spinnaker	
15.3.1.4	Use thinking skills programs such as Moptown Parade.	I	Problem Solving, Creative Thinking	Moptown Parade - Learning Co.; E-Z Logo - MECC	Memory First Step - Sunburst
15.4.2	SOCIETAL IMPACTS				
15.4.2.1	Takes only fair share of time on the computer; does not disturb others while they are on the computer; does not take or destroy something that doesn't belong to him/her (disks, programs in progress); uses appropriate language.	I	Language Arts, Math, Science, Social Studies	Elem. Vol. 7 - MECC (any appropriate software)	TIES Computer Literacy Kit Step 1; Hunter, Beverly. My Students Use Computers, Reston Pub., 1983

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COMPUTER EDUCATION: KINDERGARTEN OBJECTIVES

Upon completion of Kindergarten:

COMPUTER EDUCATION: KINDERGARTEN OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Kindergarten:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.4.2.2	Discusses advantages of using computers in terms such as: a) a machine which lets you make words or pictures on a TV (monitor) b) a machine which lets you save your work c) a machine that saves time and does what you tell it to Discusses disadvantages of using computers in terms such as: a) computers don't know everything b) computers are just machines c) computers don't have feelings	I	Language Arts, Math, Science, Social Studies	Friendly Computer - MECC; Kidword - ASD	TIES Computer Literacy Kit Step 1; Hunter, Beverly. <u>My Student's Use Computers</u> , Reston, 1983
15.4.4	ATTITUDES				
15.4.4.1	Identifies their feelings about using the computer and the reason for those feelings	I	Language Arts, Math, Science, Social Studies	Kidword - ASD	TIES Computer Literacy Kit Step 1; Hunter, Beverly. <u>My Students Use Computers</u> , Reston, 1983

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COMPUTER EDUCATION

SCOPE

FOR

MODIFIED PRIMARY

Anchorage School District
Division of Instruction
Curriculum Development Department

July 1985

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INSTRUCTION SYMBOLS

Each objective has been assigned a letter which represents the type of instruction which is to take place.

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COMPUTER EDUCATION

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COMPUTER EDUCATION
BASIC MODIFIED PRIMARY SKILLS

Uses computer terms such as computer, monitor, keyboard, disk drive, printer, memory, cursor, boot, menu, disk, program.

Properly and appropriately uses disks, computer, keyboard, and disk drive.

Turns computer on and off; boots and reboots disk by turning computer off and on; runs programs from a menu.

Uses a printer; uses other peripheral devices such as graphics tablet, robotic device, or programmable toy if they are available.

Uses problem solving/creative thinking programs such as E-Z Logo, Face Maker, Kidword, or Moptown Parade.

COMPUTER EDUCATION: MODIFIED PRIMARY OBJECTIVES

Upon completion of Modified Primary:

CORRELATION OF OBJECTIVES

		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.1	COMPUTER TERMINOLOGY				
15.1.1.1	Use hardware terms such as computer, monitor, disk drive, keyboard and printer.	R	Language Arts, Math, Science, Social Studies	Friendly Computer - MECC (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.1.2	Use names of components of a computer system such as memory.	R	Language Arts, Math, Science, Social Studies	Friendly Computer - MECC (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.1.3	Use operation terms such as cursor, boot, and menu.	R	Language Arts, Math, Science, Social Studies	Friendly Computer - MECC (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.1.4	Use software terms such as disk and program.	R	Language Arts, Math, Science, Social Studies	Friendly Computer - MECC (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.3	CARE AND HANDLING				
15.1.3.1	Handles disks carefully; properly stores disks.	R	Language Arts, Math, Science, Social Studies	Early Start-Up - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1; Hunter, Beverly My Students use Computers, Reston Pub., 1983

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COMPUTER EDUCATION: MODIFIED PRIMARY OBJECTIVES

Upon completion of Modified Primary:

COMPUTER EDUCATION: MODIFIED PRIMARY OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Modified Primary:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.3.2	Uses keyboard properly.	R	Language Arts, Math, Science, Social Studies	Elem. Vol. 7 - MECC Early Start-Up - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1; Hunter, Beverly My Students use Computers, Reston Pub., 1983
15.1.3.3	Uses computer properly (i.e., no jarring, bumping, or dirty hands); grounds self before using computer.	R	Language Arts, Math, Science, Social Studies	Early Start-Up - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1; Hunter, Beverly My Students use Computers, Reston Pub., 1983
15.1.3.4	Uses disk drive properly.	R	Language Arts, Math, Science, Social Studies	Early Start-Up - TIES; Sticky Bear Numbers - Xerox (any appropriate software)	TIES Computer Literacy Kit Step 1; Hunter Beverly, My Students use Computers, Reston Pub., 1983
15.1.4	OPERATE A COMPUTER				
15.1.4.1	Turns a computer on and off with a disk in the drive.	R	Language Arts, Math, Science, Social Studies	Early Start-Up - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.4.2	Run programs from a menu.	R	Language Arts, Math, Science, Social Studies	Elementary Vol. 7 - MECC; Early Start-Up - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1

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COMPUTER EDUCATION: MODIFIED PRIMARY OBJECTIVES

Upon completion of Modified Primary:

CORRELATION OF OBJECTIVES

		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.4.3	Breaks out of a program by using ESC key (if appropriate); reboots disk by turning the computer off and on.	E	Language Arts, Math, Science, Social Studies	Elementary Vol. 7 - MECC; Early Start-Up - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.4.4	Is able to locate and find necessary keys to respond to questions on the screen; demonstrates correct use of RETURN, space bar, shift, ESC, DELETE, left arrow, and CAPS LOCK keys. NOTE: Touch typing introduced only when students begin to use a word processing program on their own.	E	Language Arts, Math, Science, Social Studies	Friendly Computer - MECC; Juggles Rainbow - Learning Co.; Letter Recognition - Hartley; Kinder Keys - TIES; Kidword - ASD; (any appropriate software)	
15.1.5	PERIPHERAL DEVICES				
15.1.5.1	Uses graphics pads such as the Koala Pad.	E	Art; Language Arts/illustrate stories	Micro - Illustrator - Koala	Koala Pad; Power Pad
15.1.5.2	Uses a printer.	E	Language experience stories	Magic Slate - Sunburst; Kidword - ASD	
15.1.5.3	Uses robotic devices such as the LOGO turtle or programmable toys.	E	Directions, counting; Problem Solving, Creative Thinking	LOGO	Big Trak; Hunter, Beverly My Students use Computers, Reston, Pub., 1983

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COMPUTER EDUCATION: MODIFIED PRIMARY OBJECTIVES

Upon completion of Modified Primary:

COMPUTER EDUCATION: MODIFIED PRIMARY OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Modified Primary:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.3.1	USES A COMPUTER IN INTERACTIVE MODE				
15.3.1.1	Uses introductory graphics programs such as MECC Pictures or E-Z LOGO.	E	Counting, directionality; Problem Solving, Creative Thinking	Friendly Computer - MECC; E-Z Logo - MECC (must be used with Apple Logo); Kinder Comp - Spinnaker	TIES Computer Literacy Kit Step 1
15.3.1.2	Uses programming readiness programs such as Face Maker, Creature Creator, and Muggles.	E	Problem Solving, Creative Thinking	Kinder Comp - Spinnaker; Face Maker - Spinnaker	TIES Computer Literacy Kit Step 1
15.3.1.3	Use word processing readiness programs such as Story Machine, Kids on Keys, Kinder Keys, and Kidword.	E	Language Arts	Story Machine - Spinnaker; Kids on Keys - Spinnaker; Kidword - ASD.	TIES Computer Literacy Kit Step 1
15.3.1.4	Use thinking skills programs such as Moptown Parade.	E	Problem Solving, Creative Thinking	Mix and Match - Apple	MEMORY: 1st Step - Sunburst; DISCRIMINATION: 2nd Step - Sunburst
15.4.2	SOCIETAL IMPACTS				
15.4.2.1	Takes only your fair share of time on the computer; does not disturb others while they are on the computer; does not take or destroy something that doesn't belong to them (disks, programs in progress); uses appropriate language.	R	Language Arts, Math, Science, Social Studies	Kidword - ASD; (any appropriate software)	TIES Computer Literacy Kit Step 1; Hunter, Beverly My Students use Computers, Reston Pub., 1983

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COMPUTER EDUCATION: MODIFIED PRIMARY OBJECTIVES

Upon completion of Modified Primary:

COMPUTER EDUCATION: MODIFIED PRIMARY OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Modified Primary:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.4.2.2	Discusses advantages of using computers in terms such as: a) a machine which lets you make words or pictures on a TV (monitor) b) a machine which lets you save your work c) a machine that saves time and does what you tell it to Discusses disadvantages of using computers in terms such as: a) computers don't know everything b) computers are just machines c) computers don't have feelings	R	Language Arts, Math, Science, Social Studies	Friendly Computer - MECC; Kidword - ASD	TIES Computer Literacy Kit Step 1; Hunter, Beverly <u>My Students use Computers</u> , Reston Pub., 1983
15.4.4	ATTITUDES	R	Language Arts, Math, Science, Social Studies	Kidword - ASD	Hunter, Beverly <u>My Students use Computers</u> , Reston Pub., 1983
15.4.4.1	Identifies their feelings about using the computer and the reasons for those feelings.				

* Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

COMPUTER EDUCATION

SCOPE

FOR

GRADE 1

Anchorage School District
Division of Instruction
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NUMBERING OF GOALS AND OBJECTIVES

To facilitate identification of goals and objectives, each curriculum area has been assigned a number:

Science	2
Social Studies	3
Mathematics	4
Language Arts/Reading	5

Goal numbers are identified by a two-part code. Goal 2.3 refers to Science, third goal; 4.1 refers to Mathematics, first goal, etc.

Program objectives are identified by a three-part code number. Example:

5.2.3 refers to Language Arts/Reading, second goal, third program objective.

4.1.2 refers to Mathematics, first goal, second program objective.

Instructional objectives are identified by a four-part code number. Example:

3.1.5.2 refers to Social Studies, first goal, fifth program objective, second instructional objective.

INSTRUCTION SYMBOLS

Each objective has been assigned a letter which represents the type of instruction which is to take place.

Symbol

Definition

I

The skills, knowledge and/or values related to the objective are first introduced into the instructional program at this level.

E

The skills, knowledge and/or values related to the objective are expanded to provide students new insights and/or broader applications.

R

The skills, knowledge and/or values related to the objective are reviewed and reinforced at this level.

COMPUTER EDUCATION

PROGRAM STATEMENT

Computer skills are essential for every individual in today's technological society. Everyone needs to have the knowledge, skills, and attitudes that will enable them to effectively utilize computers. The Computer Instructional Program of the Anchorage School District will provide the opportunity for all students to learn to use computers and to develop positive attitudes, values, and motivation toward computers and their applications as appropriate for each individual's age, needs, and desires.

PROGRAM PHILOSOPHY

The Anchorage School District supports the belief that:

1. Computer skills should be integrated throughout the curriculum.
2. Computers should be used by students for both guided and independent practice.
3. Computers should be used by students to reinforce and extend the skills and concepts taught in the classroom.
4. Computers should be used by teachers to teach and/or demonstrate selected skills and concepts, to assist with record keeping and the generation of classroom materials, and to assist with diagnosis and evaluation of student learning.
5. Computers should be used to teach problem solving skills and other computer related skills such as word processing, data processing, information retrieval, business and personal finance, and programming.
6. The Computer Instructional Program needs to be viewed as a flexible program due to rapidly changing technology.

PROGRAM GOALS

- 15.1 The student is able to understand and use the vocabulary, definitions, and procedures associated with computers, their operation, and the operation of their peripherals as appropriate to needs and interests.
- 15.2 The student is able to associate computers with appropriate areas of application, effectively select and utilize application software, and apply this knowledge in solving problems.
- 15.3 The student is able to understand the nature and purpose of computer languages and programming, to develop and write computer programs as appropriate to needs and interest, and to apply this knowledge in solving problems.
- 15.4 The student is familiar with the development of computing devices; is aware of the impact of technology on society; is aware of career, vocational, home, and recreational uses of computers; displays positive attitudes towards computers; and understands the emerging roles of computers and their effective use in a changing society.

COMPUTER EDUCATION
BASIC FIRST GRADE SKILLS

Uses computer terms such as computer, monitor, keyboard, disk drive, printer, memory, cursor, boot, menu, disk, program.

Properly and appropriately uses disks, computer, keyboard, and disk drive.

Turns computer on and off; boots and reboots disk by turning computer off and on; reseats and reboots disk by turning computer off and on.

Runs programs from a menu.

Uses a printer; uses other peripheral devices such as graphics tablet, robotic device, or programmable toy if they are available.

Uses problem solving/creative thinking programs such as E-Z Logo, Face Maker, Kidword, or Moptown Parade.

COMPUTER EDUCATION: GRADE 1 OBJECTIVES

Upon completion of Grade 1:

CORRELATION OF OBJECTIVES

		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.1	COMPUTER TERMINOLOGY				
15.1.1.1	Use hardware terms such as computer, monitor, disk drive, keyboard and printer.	R	Language Arts, Math, Science, Social Studies,	Friendly Computer - MECC (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.1.2	Use names of components of a computer system such as memory.	R	Language Arts, Math, Science, Social Studies,	Friendly Computer - MECC (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.1.3	Use operation terms such as cursor, boot, and menu.	R	Language Arts, Math, Science, Social Studies,	Friendly Computer - MECC (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.1.4	Use software terms such as disk and program.	R	Language Arts, Math, Science, Social Studies,	Friendly Computer - MECC (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.3	CARE AND HANDLING.				
15.1.3.1	Handles disks carefully; properly stores disks.	R	Language Arts, Math, Science, Social Studies,	Early Start-Up - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1; Hunter, Beverly. <u>My Students use Computers</u> , Reston Pub., 1983

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COMPUTER EDUCATION: GRADE 1 OBJECTIVES

Upon completion of Grade 1:

		CORRELATION OF OBJECTIVES		
	*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.3.2 Uses keyboard properly.	R	Language Arts, Math, Science, Social Studies,	Elem. Vol. 7 - MECC; Early Start-Up - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1; Hunter, Beverly. <u>My Students use Computers</u> , Reston Pub., 1983
15.1.3.3 Uses computer properly (i.e., no farring, bumping, or dirty hands); grounds self before using computer.	R	Language Arts, Math, Science, Social Studies,	Early Start-Up - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1; Hunter, Beverly. <u>My Students use Computers</u> , Reston Pub., 1983
15.1.3.4 Uses disk drive properly.	R	Language Arts, Math, Science, Social Studies,	Early Start-Up - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1; Hunter, Beverly. <u>My Students use Computers</u> , Reston Pub., 1983
15.1.4 OPERATE A COMPUTER.				
15.1.4.1 Turns a computer on and off with a disk in the drive.	R	Language Arts, Math, Science, Social Studies,	Early Start-Up - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.4.2 Run programs from a menu.	R	Language Arts, Math, Science, Social Studies,	Elementary Vol. 7 - MECC; Early Start-Up - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1

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COMPUTER EDUCATION: GRADE 1 OBJECTIVES

Upon completion of Grade 1:

COMPUTER EDUCATION: GRADE 1 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 1:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.4.3	Break out of a program by using ESC key (if appropriate); reboots disk by turning the computer off and on.	E	Language Arts, Math, Science, Social Studies,	Elementary Vol. 7 - MECC; Early Start-Up - TIES; Kidword - ASD; (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.4.4	Is able to locate and find necessary keys to respond to questions on the screen; demonstrates correct use of RETURN, space bar, shift, ESC, DELETE, CAPS LOCK and left arrow keys. NOTE: Touch typing introduced only when students begin to use a word processing program on their own.	E	Language Arts, Math, Science, Social Studies,	Friendly Computer - MECC; Juggles Rainbow - Learning Co.; Letter Recognition - Hartley; Kinder Keys - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.4.5	Is able to reboot and/or reseat disk and reboot if disk does not boot; reboots disk if program bombs by turning computer off/on.	I	Language Arts, Math, Science, Social Studies,	Early Start-Up- TIES; (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.5	PERIPHERAL DEVICES.				
15.1.5.1	Uses graphics pads such as the Koala Pad.	E	Art; Language Arts/illustrate stories	Micro-Illustrator - Koala	Koala Pad; Power Pad
15.1.5.2	Uses a printer.	E	Language experience stories	Magic Slate - Sunburst; Kidword - ASD; Printshop - Broderbund	
15.1.5.3	Uses robotic devices such as the LOGO turtle or programmable toys.	E	Directions, counting; Problem Solving, Creative Thinking	LOGO	Big Trak; Hunter, Beverly. <u>My Students use Computers</u> , Reston Pub., 1983

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COMPUTER EDUCATION: GRADE 1 OBJECTIVES

Upon completion of Grade 1:

COMPUTER EDUCATION: GRADE 1 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 1:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.3.1	USE COMPUTER IN INTERACTIVE MODE				
15.3.1.1	Use introductory graphics programs such as MECC Pictures and E-Z LOGO.	E	Counting, directionality; Problem Solving, Creative Thinking	Friendly Computer - MECC; E-Z Logo - MECC (must be used with Apple Logo)	TIES Computer Literacy Kit Step 1; Hunter, Beverly. <u>My Students use Computers</u> , Reston Pub., 1983
15.3.1.2	Use programming readiness programs such as Face Maker, Creature Creator, and Muggles.	E	Problem Solving, Creative Thinking	Creature Creator; Face Maker - Spinnaker	
15.3.1.3	Use word processing readiness programs such as Story Machine, Kids on Keys, Kinder Keys and Kidword.	E	Problem Solving, Creative Thinking	Story Machine - Spinnaker; Kinder Keys Keyboarding Activities - TIES; Kidword - ASD	TIES Computer Literacy Kit Step 1
5.3.1.4	Use thinking skills programs such as Bumble Games and Gertrude's Secrets.	E	Problem Solving, Creative Thinking	Gertrude's Secrets - Learning Co.; Bumble Games - Learning Co.	MEMORY: 1st Step - Sunburst; DISCRIMINATION: 2nd Step - Sunburst
5.4.2	SOCIETAL IMPACTS				
15.4.2.1	Takes only fair share of time on the computer; does not disturb others while they are on the computer; does not take or destroy something that doesn't belong to them (disks, programs in progress); uses appropriate language.	R	Language Arts, Math, Science, Social Studies,	Early Addition - MECC (any appropriate software)	TIES Computer Literacy Kit Step 1; Hunter, Beverly. <u>My Students use Computers</u> , Reston Pub., 1983

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COMPUTER EDUCATION: GRADE 1 OBJECTIVES

Upon completion of Grade 1:

COMPUTER EDUCATION: GRADE 1 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 1:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.4.2.2	Discusses advantages of using computers in terms such as: a) a machine which lets you make words or pictures on a TV (monitor) b) a machine which lets you save your work c) a machine that saves time and does what you tell it to Discusses disadvantages of using computers in terms such as: a) computers don't know everything b) computers are just machines c) computers don't have feelings	R	Language Arts, Math, Science, Social Studies,	Friendly Computer - MECC; Kidword - ASD	TIES Computer Literacy Kit Step 1; Hunter, Beverly. <u>My Students use Computers</u> , Reston Pub., 1983
15.4.4	ATTITUDES	R	Language Arts, Math, Science, Social Studies,	Kidword - ASD	TIES Computer Literacy Kit Step 1; Hunter, Beverly. <u>My Students use Computers</u> , Reston Pub., 1983
15.4.4.1	Identifies their feelings about using the computer and the reasons for those feelings.				

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COMPUTER EDUCATION

SCOPE

FOR

GRADE 2

Anchorage School District
Division of Instruction
Curriculum Development Department

July 1985

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NUMBERING OF GOALS AND OBJECTIVES

To facilitate identification of goals and objectives, each curriculum area has been assigned a number:

Science	2
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Language Arts/Reading	5

Goal numbers are identified by a two-part code. Goal 2.3 refers to Science, third goal; 4.1 refers to Mathematics, first goal, etc.

Program objectives are identified by a three-part code number. Example:

5.2.3 refers to Language Arts/Reading, second goal, third program objective.

4.1.2 refers to Mathematics, first goal, second program objective.

Instructional objectives are identified by a four-part code number. Example:

3.1.5.2 refers to Social Studies, first goal, fifth program objective, second instructional objective.

INSTRUCTION SYMBOLS

Each objective has been assigned a letter which represents the type of instruction which is to take place.

<u>Symbol</u>	<u>Definition</u>
I	The skills, knowledge and/or values related to the objective are first introduced into the instructional program at this level.
E	The skills, knowledge and/or values related to the objective are expanded to provide students new insights and/or broader applications.
R	The skills, knowledge and/or values related to the objective are reviewed and reinforced at this level.

COMPUTER EDUCATION

PROGRAM STATEMENT

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5. Computers should be used to teach problem solving skills and other computer related skills such as word processing, data processing, information retrieval, business and personal finance, and programming.
6. The Computer Instructional Program needs to be viewed as a flexible program due to rapidly changing technology.

PROGRAM GOALS

- 15.1 The student is able to understand and use the vocabulary, definitions, and procedures associated with computers, their operation, and the operation of their peripherals as appropriate to needs and interests.
- 15.2 The student is able to associate computers with appropriate areas of application, effectively select and utilize application software, and apply this knowledge in solving problems.
- 15.3 The student is able to understand the nature and purpose of computer languages and programming, to develop and write computer programs as appropriate to needs and interest, and to apply this knowledge in solving problems.
- 15.4 The student is familiar with the development of computing devices; is aware of the impact of technology on society; is aware of career, vocational, home, and recreational uses of computers; displays positive attitudes towards computers; and understands the emerging roles of computers and their effective use in a changing society.

COMPUTER EDUCATION
BASIC SECOND GRADE SKILLS

Uses computer terms such as computer, monitor, keyboard, disk drive, printer, memory, cursor, boot, menu, disk, program.

Properly and appropriately uses disks, computer, keyboard, and disk drive.

Turns computer on and off; boots and reboots disk by using [CONTROL][OPEN APPLE][RESET]; reseats and reboots disk if disk doesn't boot.

Runs programs from a menu.

Uses a printer; uses other peripheral devices such as graphics tablet, robotic device, or programmable toy if they are available.

Uses problem solving/creative thinking programs such as E-Z Logo, Creature Creator, or Gertrude's Puzzles.

Uses word processing programs such as Kidword or Kidwriter.

COMPUTER EDUCATION: GRADE 2 OBJECTIVES

Upon completion of Grade 2:

COMPUTER EDUCATION: GRADE 2 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 2:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.1	COMPUTER TERMINOLOGY				
15.1.1.1	Use hardware terms such as computer, monitor, disk drive, keyboard, and printer.	R	Language Arts, Math, Science, Social Studies	Computer Words - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.1.2	Use names of components of a computer system such as memory.	R	Language Arts, Math, Science, Social Studies	Computer Words - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.1.3	Use operation terms such as cursor, boot, and menu.	R	Language Arts, Math, Science, Social Studies	Computer Words - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.1.4	Use software terms such as disk and program.	R	Language Arts, Math, Science, Social Studies	Computer Words - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.3	CARE AND HANDLING				
15.1.3.1	Handles disks carefully; properly stores disks.	R	Language Arts, Math, Science, Social Studies	Early Start-Up - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1; Hunter, Beverly. <u>My Students use Computers</u> , Reston, Pub., 1983

* Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

COMPUTER EDUCATION: GRADE 2 OBJECTIVES

Upon completion of Grade 2:

		CORRELATION OF OBJECTIVES		
	*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.3.2 Uses keyboard properly.	R	Language Arts, Math, Science, Social Studies	Early Start-Up - TIES Jr. Typer - Aquarius (any appropriate software)	TIES Computer Literacy Kit Step 1; Hunter, Beverly. <u>My Students use Computers</u> , Reston Pub., 1983
15.1.3.3 Uses computer properly (i.e., no jarring, bumping, or dirty hands); grounds self before using computer.	R	Language Arts, Math, Science, Social Studies	Early Start-Up - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1; Hunter, Beverly. <u>My Students use Computers</u> , Reston Pub., 1983
15.1.3.4 Uses disk drive properly.	R	Language Arts, Math, Science, Social Studies	Early Start-Up - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1; Hunter, Beverly. <u>My Students use Computers</u> , Reston Pub., 1983
15.1.4 OPERATE A COMPUTER				
15.1.4.1 Boots a disk.	R	Language Arts, Math, Science, Social Studies	Early Start-Up - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.4.2 Runs programs from a menu.	R	Language Arts, Math, Science, Social Studies	Early Addition - MECC; Space Subtraction - MECC (any appropriate software)	TIES Computer Literacy Kit Step 1

* Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

COMPUTER EDUCATION: GRADE 2 OBJECTIVES

Upon completion of Grade 2:

COMPUTER EDUCATION: GRADE 2 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 2:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.4.3	Breaks out of a program by using ESC key (if appropriate); reboots disk by using [CONTROL][OPEN APPLE][RESET].	E	Language Arts, Math, Science, Social Studies	Kidword - ASD; Early Addition - MECC; Word Wizards - MECC; Space Subtraction - MECC; (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.4.4	Is able to locate and find necessary keys to respond to questions on the screen; demonstrates correct use of RETURN, space bar, shift, ESC, DELETE, left arrow keys, CAPS LOCK and [CONTROL][OPEN APPLE][RESET] keys. NOTE: Touch typing introduced only when students begin to use a word processing program on their own.	E	Language Arts, Math, Science, Social Studies	Kinder Keys - TIES; Kinder Keys Keyboarding Activities - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.4.5	Is able to reboot and/or reseat disk and reboot if disk does not boot; reboots disk if program bombs by using [CONTROL][OPEN APPLE][RESET].	E	Language Arts, Math, Science, Social Studies	Early Start-Up - TIES (any appropriate software)	TIES Computer Literacy Kit Step 1
15.1.5	PERIPHERAL DEVICES				
15.1.5.1	Uses graphics pads such as the Koala Pad.	E	Art - illustrating stories for Language Arts.	Microillustrator - Koala; Printshop - Broderbund	Koala Pad; Power Pad
15.1.5.2	Uses a printer.	E	Language Arts - writing	Writing Workshop - Milliken; Magic Slate - Sunburst; Kidword - ASD; Printshop - Broderbund	

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COMPUTER EDUCATION: GRADE 2 OBJECTIVES

Upon completion of Grade 2:

CORRELATION OF OBJECTIVES

		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.5.3	Uses robotic devices such as the LOGO turtle or programmable toys.	E	Problem Solving, Critical Thinking	LOGO	Turtle Tot; Hunter, Beverly; My Students use Computers; Reston Pub., 1983; Big Trak
15.2.3	WORD PROCESSING.				
15.2.3.4	Use a word processing program to create and print a document.	I	Language Arts, Social Studies	Kidword - ASD; Kidwriter - Scholastic; Writing Workshop - Milliken	TIES Computer Literacy Kit, Step 1
15.3.1	USE COMPUTER IN INTERACTIVE MODE.				
15.3.1.1	Use introductory graphics programs such as MECC Pictures and E-Z LOGO.	E	Problem Solving, Critical Thinking	Friendly Computer - MECC; E-Z Logo - MECC (must be with Apple LOGO)	TIES Computer Literacy Kit Step 1
15.3.1.2	Use programming readiness programs such as Face Maker, Creature Creator, and Muggles.	E	Problem Solving, Critical Thinking	Man of 10,000 Faces - Koeff Creations; Gertrude's Secrets - Learning Co.	
15.3.1.4	Use thinking skills programs such as Gertrude's Puzzles and Moptown Parade.	E	Problem Solving, Critical Thinking	Moptown Parade; Gertrude's Puzzles - Learning Co.	TIES Computer Literacy Kit Step 1; Memory: First Step - Sunburst

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COMPUTER EDUCATION: GRADE 2 OBJECTIVES

Upon completion of Grade 2:

COMPUTER EDUCATION: GRADE 2 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 2:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.4.2	SOCIETAL IMPACTS				
15.4.2.1	Takes only fair share of time on the computer; does not disturb others while they are on the computer; does not take or destroy something that doesn't belong to them (disks, programs in progress); use appropriate language.	R	Language Arts, Math, Science, Social Studies	Early Addition - MECC; Space Subtraction - MECC; (any appropriate software)	TIES Computer Literacy Kit Step 1; Hunter, Beverly. <u>My Students use Computers</u> , Reston Pub., 1983
15.4.2.2	Discusses advantages of using computers in terms such as: a) a machine which lets you make words or pictures on a TV (monitor) b) a machine which lets you save your work c) a machine that saves time and does what you tell it to Discusses disadvantages of using computers in terms such as: a) computers don't know everything b) computers are just machines c) computers don't have feelings	R	Language Arts, Math, Science, Social Studies	Printshop - Broderbund; Friendly Computer - MECC; Kidword - ASD; Magic Slate - Sunburst; Writing Workshop - Milliken	TIES Computer Literacy Kit Step 1; Hunter, Beverly. <u>My Students use Computers</u> , Reston Pub., 1983
15.4.4	ATTITUDES				
15.4.4.1	Identifies their feelings about using the computer and the reasons for those feelings.	R	Language Arts, Math, Science, Social Studies	Number Farm - DLM; Alphabet Circus - DLM; Kidword - ASD	TIES Computer Literacy Kit Step 1; Hunter, Beverly. <u>My Students use Computers</u> , Reston Pub., 1983

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COMPUTER EDUCATION

SCOPE

FOR

GRADE 3

Anchorage School District
Division of Instruction
Curriculum Development Department

July 1985

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The skills, knowledge and/or values related to the objective are reviewed and reinforced at this level.

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PROGRAM GOALS

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- 15.4 The student is familiar with the development of computing devices; is aware of the impact of technology on society; is aware of career, vocational, home, and recreational uses of computers; displays positive attitudes towards computers; and understands the emerging roles of computers and their effective use in a changing society.

COMPUTER EDUCATION
BASIC THIRD GRADE SKILLS

Uses computer terms such as computer, monitor, keyboard, disk drive, printer, memory, cursor, boot, menu, disk, program, input, output.

Identifies functions of disk drive, monitor, printer, and disks.

Properly and appropriately uses disks, computer, keyboard, disk drive, and printer.

Turns computer on and off; boots and reboots disk by using [CONTROL][OPEN APPLE][RESET].

Does minor troubleshooting (reseats and reboots disk if disk doesn't boot, checks to be sure everything is plugged in).

Runs programs from a menu.

Uses a printer; uses other peripheral devices such as graphics tablet, robotic device, or programmable toy if they are available.

Uses problem solving/creative thinking programs such as Delta Drawing, Print Shop, Creature Creator, or Moptown Hotel.

Uses a word processing program; uses a data base program.

Describes advantages and disadvantages of using computers; describes legal and ethical uses of computers.

COMPUTER EDUCATION: GRADE 3 OBJECTIVES

Upon completion of Grade 3:

COMPUTER EDUCATION: GRADE 3 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 3:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.1 COMPUTER TERMINOLOGY					
15.1.1.1	Use hardware terms such as computer, monitor, disk drive, keyboard and printer.	R	Language Arts, Math, Science, Social Studies	Computer Terms - TIES (any appropriate software)	TIES Computer Literacy Kit Step 2
15.1.1.2	Use names of components of a computer system such as memory, input, and output.	E	Language Arts, Math, Science, Social Studies	Computer Terms - TIES (any appropriate software)	TIES Computer Literacy Kit Step 2
15.1.1.3	Use operation terms such as cursor, boot, and menu.	R	Language Arts, Math, Science, Social Studies	Apple Presents Apple - Apple; Computer Terms - TIES (any appropriate software)	TIES Computer Literacy Kit Step 2
15.1.1.4	Use software terms such as disk and program.	R	Language Arts, Math, Science, Social Studies	Computer Terms - TIES (any appropriate software)	TIES Computer Literacy Kit Step 2
15.1.2 FUNCTIONS OF COMPONENTS					
15.1.2.2	Identifies function of disk drive, monitor, and printer.	I	Language Arts, Math, Science, Social Studies	Printshop - Broderbund; Computer Terms - TIES	TIES Computer Literacy Kit Step 2
15.1.2.3	Identifies function of disk.	I	Language Arts, Math, Science, Social Studies	Computer Terms - TIES Writing Workshop - Milliken	TIES Computer Literacy Kit Step 2

* Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

COMPUTER EDUCATION: GRADE 3 OBJECTIVES

Upon completion of Grade 3:

COMPUTER EDUCATION: GRADE 3 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 3:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.3	CARE AND HANDLING				
15.1.3.1	Handles disks carefully; properly stores disks.	R	Language Arts, Math, Science, Social Studies	(any appropriate software)	TIES Computer Literacy Kit Step 2
15.1.3.2	Uses keyboard properly.	R	Language Arts, Math, Science, Social Studies	Apple Presents Apple - Apple; (any appropriate software)	TIES Computer Literacy Kit Step 2
15.1.3.3	Uses computer properly (i.e., no jarring, bumping, or dirty hands); grounds self before using computer.	R	Language Arts, Math, Science, Social Studies	(any appropriate software)	TIES Computer Literacy Kit Step 2
15.1.3.4	Uses disk drive and printer properly.	E	Language Arts, Math, Science, Social Studies	Print Shop - Broderbund; (any appropriate software)	TIES Computer Literacy Kit Step 2
15.1.4	OPERATE A COMPUTER				
15.1.4.1	Boots a disk.	R	Language Arts, Math, Science, Social Studies	(any appropriate software)	TIES Computer Literacy Kit Step 2
15.1.4.2	Runs programs from a menu.	R	Language Arts, Math, Science, Social Studies	Addition Logician - MECC; (any appropriate software)	TIES Computer Literacy Kit Step 2

* Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

COMPUTER EDUCATION: GRADE 3 OBJECTIVES

Upon completion of Grade 3:

COMPUTER EDUCATION: GRADE 3 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 3:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.4.3	Breaks out of a program by using ESC key (if applicable); reboots disk by using [CONTROL][OPEN APPLE][RESET].	R	Language Arts, Math, Science, Social Studies	Space Subtraction - MECC; Pets - MECC; (any appropriate software)	TIES Computer Literacy Kit Step 2
15.1.4.4	Is able to locate and find necessary keys to respond to questions on the screen; demonstrates correct use of RETURN, space bar, shift, ESC, DELETE, left arrow keys, [CONTROL][OPEN APPLE][RESET], CAPS LOCK and closed apple keys. Uses touch typing skills, especially when using word processing programs.	E	Language Arts, Math, Science, Social Studies	Apple Present Apple - Apple; Kinder Key Keyboarding Activities - TIES; Microtype Wonderful World of PAWS - Southwestern; (any appropriate software)	TIES Computer Literacy Kit Step 2
15.1.4.5	Is able to reboot and/or reseat disk and reboot if disk does not boot; reboots disk if program bombs by using [CONTROL][OPEN APPLE][RESET]; checks that hardware is plugged in if computer or monitor is not working.	E	Language Arts, Math, Science, Social Studies	(any appropriate software)	TIES Computer Literacy Kit Step 2
15.1.5	PERIPHERAL DEVICES				
15.1.5.1	Uses graphics pad such as the Koala Pad as input device.	E	Art - illustrating stories for Language Arts		Koala Pad; Power Pad
15.1.5.2	Uses a printer as output device.	R	Language Arts - writing	Bank St. Writer - Scholastic; Print Shop - Broderbund	

* Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

COMPUTER EDUCATION: GRADE 3 OBJECTIVES

Upon completion of Grade 3:

COMPUTER EDUCATION: GRADE 3 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 3:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.5.3	Uses robotic devices such as the LOGO turtle or programmable toys.	E	Problem Solving, Critical Thinking	LOGO	Little Professor
15.2.3	WORD PROCESSING				
15.2.3.4	Use a word processing program to create and print a document.	E	Language Arts, Social Studies, Math, Science	Bank St. Writer - Scholastic; Milliken Writing Workshop; Kidword - ASD (any appropriate word processing program)	
15.2.3.5	Use a word processing program to edit a document. a) move cursor and make corrections b) insert and delete lines and text segments c) move, copy, and delete blocks of text	I	Language Arts, Social Studies, Math, Science	any appropriate word processing program	
15.2.3.6	Use a word processing program to format a document. a) set and change margins, line spacing, and tabs b) set and change page formatting (layout) c) set and change printer options d) set and change paging and page numbers	I	Language Arts, Social Studies, Math, Science	any appropriate word processing program	
15.2.3.7	Use a word processing program to perform searches and to make replacements.	I	Language Arts, Social Studies, Math, Science	any appropriate word processing program	

* Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

COMPUTER EDUCATION: GRADE 3 OBJECTIVES

Upon completion of Grade 3:

COMPUTER EDUCATION: GRADE 3 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 3:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.2.3.8	Save, delete, copy, and rename word processing files.	I	Language Arts, Social Studies, Math, Science	any appropriate word processing program	
15.2.4	DATA BASES	I			
15.2.4.3	Identify examples of data base program applications.	I	Social Studies, Science, Language Arts, Problem Solving, Critical Thinking	Classification - MECC; Bookworm - TIES; Stuff and Fetch - MECC; Creat-A-Base - MECC; (any appropriate data base program)	TIES Computer Literacy Kit Step 2; ASD ROM Readers; Telephone Books, Notebook - Window
15.2.4.4	Create a data base file.	I	Social Studies, Science, Language Arts, Problem Solving, Critical Thinking	any appropriate data base program	
15.2.4.5	Edit a data base file. a) Insert records into a file b) Delete records from a file c) Change records in a file	I	Social Studies, Science, Language Arts, Problem Solving, Critical Thinking	any appropriate data base program	
15.2.4.6	Format and print reports with a data base program. a) Create and print a tables-style report	I	Social Studies, Science, Language Arts, Problem Solving, Critical Thinking	any appropriate data base program	

* Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

COMPUTER EDUCATION: GRADE 3 OBJECTIVES

Upon completion of Grade 3:

15.2.4.7	Do searches and sorts with a data base program.	I	Social Studies, Science, Language Arts, Problem Solving, Critical Thinking	any appropriate data base program	
15.2.4.8	Save data base files.	I	Social Studies, Science, Language Arts, Problem Solving, Critical Thinking	any appropriate data base program	
15.3.1	USE COMPUTER IN INTERACTIVE MODE				
15.3.1.1	Use introductory graphics programs such as Delta Drawing or Bumble Games.	R	Problem Solving, Critical Thinking	Bumble Games - Learning Co.; Delta Drawing - Spinnaker Print Shop - Borderbund	
15.3.1.2	Use programming readiness programs such as Creature Creator.	R	Problem Solving, Critical Thinking	Man of 10,000 Faces - Koeff Creations; E-Z Pilot - TIES; LOGO - Apple	TIES Computer Literacy Kit Step 2; Apple Logo in the Classroom - MECC (with Apple LOGO)
15.3.1.4	Use thinking skills programs such as Gertrude's Puzzles and Moptown Hotel.	R	Problem Solving, Critical Thinking	Gertrude's Puzzles - Learning Co.; Moptown Hotel; Learning Company; Pond - Sunburst	

* Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

COMPUTER EDUCATION: GRADE 3 OBJECTIVES

Upon completion of Grade 3:

COMPUTER EDUCATION: GRADE 3 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 3:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.4.2	SOCIETAL IMPACTS				
15.4.2.1	Identifies ways of using computers which do not neglect or violate the rights of others.	E	Language Arts, Math, Science, Social Studies		TIES Computer Literacy Kit Step 2
15.4.2.2	Describes advantages and disadvantages of using computers.	E	Language Arts, Math, Science, Social Studies	Piracy - ASD	TIES Computer Literacy Kit Step 2; Hunter, Beverly. <u>My Students Use Computers</u> , Reston Pub., 1983
15.4.2.3	Describes legal and ethical uses of computers.	I	Language Arts, Math, Science, Social Studies	Piracy - ASD	TIES Computer Literacy Kit Step 2
15.4.4	ATTITUDES				
15.4.4.2	Displays positive attitudes towards computers and computer applications.	R	Language Arts, Math, Science, Social Studies		TIES Computer Literacy Kit Step 2; Hunter, Beverly. <u>My Students use Computers</u> , Reston Pub., 1983

COMPUTER EDUCATION

SCOPE

FOR

GRADE 4

Anchorage School District
Division of Instruction
Curriculum Development Department

July 1985

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NUMBERING OF GOALS AND OBJECTIVES

To facilitate identification of goals and objectives, each curriculum area has been assigned a number:

Science	2
Social Studies	3
Mathematics	4
Language Arts/Reading	5

Goal numbers are identified by a two-part code. Goal 2.3 refers to Science, third goal; 4.1 refers to Mathematics, first goal, etc.

Program objectives are identified by a three-part code number. Example:

5.2.3 refers to Language Arts/Reading, second goal, third program objective.

4.1.2 refers to Mathematics, first goal, second program objective.

Instructional objectives are identified by a four-part code number. Example:

3.1.5.2 refers to Social Studies, first goal, fifth program objective, second instructional objective.

INSTRUCTION SYMBOLS

Each objective has been assigned a letter which represents the type of instruction which is to take place.

<u>Symbol</u>	<u>Definition</u>
I	The skills, knowledge and/or values related to the objective are first introduced into the instructional program at this level.
E	The skills, knowledge and/or values related to the objective are expanded to provide students new insights and/or broader applications.
R	The skills, knowledge and/or values related to the objective are reviewed and reinforced at this level.

COMPUTER EDUCATION

PROGRAM STATEMENT

Computer skills are essential for every individual in today's technological society. Everyone needs to have the knowledge, skills, and attitudes that will enable them to effectively utilize computers. The Computer Instructional Program of the Anchorage School District will provide the opportunity for all students to learn to use computers and to develop positive attitudes, values, and motivation toward computers and their applications as appropriate for each individual's age, needs, and desires.

PROGRAM PHILOSOPHY

The Anchorage School District supports the belief that:

1. Computer skills should be integrated throughout the curriculum.
2. Computers should be used by students for both guided and independent practice.
3. Computers should be used by students to reinforce and extend the skills and concepts taught in the classroom.
4. Computers should be used by teachers to teach and/or demonstrate selected skills and concepts, to assist with record keeping and the generation of classroom materials, and to assist with diagnosis and evaluation of student learning.
5. Computers should be used to teach problem solving skills and other computer related skills such as word processing, data processing, information retrieval, business and personal finance, and programming.
6. The Computer Instructional Program needs to be viewed as a flexible program due to rapidly changing technology.

PROGRAM GOALS

- 15.1 The student is able to understand and use the vocabulary, definitions, and procedures associated with computers, their operation, and the operation of their peripherals as appropriate to needs and interests.
- 15.2 The student is able to associate computers with appropriate areas of application, effectively select and utilize application software, and apply this knowledge in solving problems.
- 15.3 The student is able to understand the nature and purpose of computer languages and programming, to develop and write computer programs as appropriate to needs and interest, and to apply this knowledge in solving problems.
- 15.4 The student is familiar with the development of computing devices; is aware of the impact of technology on society; is aware of career, vocational, home, and recreational uses of computers; displays positive attitudes towards computers; and understands the emerging roles of computers and their effective use in a changing society.

COMPUTER EDUCATION
BASIC FOURTH GRADE SKILLS

Uses computer terms such as computer, monitor, keyboard, disk drive, printer, memory, cursor, boot, menu, disk, program, input, output, documentation.

Identifies functions of disk drive, monitor, printer, and disks; recognizes need for hardware/software compatibility.

Properly and appropriately uses disks, computer, keyboard, disk drive, and printer; uses touch typing for word processing.

Turns computer on and off; boots and reboots disk by using [CONTROL][OPEN APPLE][RESET].

Does minor troubleshooting (reseats and reboots disk if disk doesn't boot, checks to be sure everything is plugged in).

Runs programs from a menu.

Uses a printer; uses other peripheral devices such as graphics tablet, robotic device, or programmable toy if they are available.

Uses problem solving/creative thinking programs such as Delta Drawing, Print Shop, Creature Creator, or Moptown Hotel.

Uses a word processing program; uses a data base program.

Uses puzzle and poster generator programs.

Describes advantages and disadvantages of using computers; describes legal and ethical uses of computers.

COMPUTER EDUCATION: GRADE 4 OBJECTIVES

Upon completion of Grade 4:

COMPUTER EDUCATION: GRADE 4 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 4:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.1	COMPUTER TERMINOLOGY				
15.1.1.1	Use hardware terms such as computer, monitor, disk drive, keyboard, and printer.	R	Language Arts, Math, Science, Social Studies	Computer Terms - TIES (any appropriate software)	TIES Computer Literacy Kit Step 2
15.1.1.2	Use names of components of a computer system such as memory, input, and output.	R	Language Arts, Math, Science, Social Studies	Computer Terms - TIES (any appropriate software)	TIES Computer Literacy Kit Step 2
15.1.1.3	Use operation terms such as cursor, boot and menu.	R	Language Arts, Math, Science, Social Studies	Computer Terms - TIES (any appropriate software)	TIES Computer Literacy Kit Step 2
15.1.1.4	Use software terms such as disk, program, and documentation.	E	Language Arts, Math, Science, Social Studies	Computer Terms - TIES (any appropriate software)	TIES Computer Literacy Kit Step 2
15.1.2	FUNCTIONS OF COMPONENTS				
15.1.2.2	Identifies function of disk drive, monitor, and printer.	R	Language Arts, Math, Science, Social Studies	Computer Terms - TIES; Print Shop - Broderbund; (any appropriate software)	TIES Computer Literacy Kit Step 2
15.1.2.3	Identifies function of disk.	R	Language Arts, Math, Science, Social Studies	Computer Terms - TIES; Bank Street Writer - Broderbund	TIES Computer Literacy Kit Step 2

* Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

COMPUTER EDUCATION: GRADE 4 OBJECTIVES

Upon completion of Grade 4:

COMPUTER EDUCATION: GRADE 4 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 4:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.3	CARE AND HANDLING				
15.1.3.1	Handles disks carefully; properly stores disks.	R	Language Arts, Math, Science, Social Studies	(any appropriate software)	TIES Computer Literacy Kit Step 2
15.1.3.2	Uses keyboard properly.	R	Language Arts, Math, Science, Social Studies	Quill - D.C. Heath Kidword - ASD	TIES Computer Literacy Kit Step 2
15.1.3.3	Uses computer properly (i.e., no jarring, bumping, or dirty hands); grounds self before using computer.	R	Language Arts, Math, Science, Social Studies	(any appropriate software)	TIES Computer Literacy Kit Step 2
15.1.3.4	Uses disk drive and printer properly.	R	Language Arts, Math, Science, Social Studies	Bank St. Writer - Scholastic; Quill - D.C. Heath Print Shop - Broderbund; (any appropriate software)	
15.1.4	OPERATE A COMPUTER				
15.1.4.1	Boots a disk.	R	Language Arts, Math, Science, Social Studies	(any appropriate software)	TIES Computer Literacy Kit Step 2
15.1.4.2	Runs programs from a menu.	R	Language Arts, Math, Science, Social Studies	Multiplication Puzzles - MECC (any appropriate software)	TIES Computer Literacy Kit Step 2

* Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

COMPUTER EDUCATION: GRADE 4 OBJECTIVES

Upon completion of Grade 4:

COMPUTER EDUCATION: GRADE 4 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 4:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.4.3	Breaks out of a program by using ESC key (if appropriate); reboots disk by using [CONTROL][OPEN APPLE][RESET].	R	Language Arts, Math, Science, Social Studies	Pets, Inc. - MECC; (any appropriate software)	TIES Computer Literacy Kit Step 2
15.1.4.4	Demonstrates correct use of RETURN, space bar, shift, ESC, DELETE, left arrow keys, [CONTROL][OPEN APPLE][RESET], CAPS LOCK and closed apple keys. Uses touch typing skills, especially when using word processing programs.	E	Language Arts, Math, Science, Social Studies	How to use the Apple Computer Keyboard - Apple; Typing Tutor III - Microsoft; Microtype - The Wonderful World of Paws - South Western Pub.; (any appropriate software)	TIES Computer Literacy Kit Step 2
15.1.4.5	Is able to reboot and/or reseat disk and reboot if disk does not boot; reboots disk if program bombs by using [CONTROL][OPEN APPLE][RESET]; checks that hardware is plugged in if computer, monitor, or printer is not working.	E	Language Arts, Math, Science, Social Studies	(any appropriate software)	Microcomputer X-ports booklet - ASD
15.1.4.6	Recognizes need for hardware-software compatibility.	I		Print Shop - Broderbund; Puzzles and Posters - MECC; Crossword Magic - L&S Software	
15.1.5	PERIPHERAL DEVICES				
15.1.5.1	Uses graphics pad such as the Koala Pad as input device.	R	Art; Language Arts illustrations	Micro-Illustrator - Koala; Bank St. Storybook - Mindscapes	Koala Pad; Power Pad

* Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

COMPUTER EDUCATION: GRADE 4 OBJECTIVES

Upon completion of Grade 4:

COMPUTER EDUCATION: GRADE 4 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 4:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.5.2	Uses a printer as output device.	R	Vocabulary - Language Arts	Crossword Magic - L&S Software	
15.1.5.3	Uses robotic devices such as the LOGO turtle or FRED.	R	Problem Solving, Critical Thinking		
15.2.3	WORD PROCESSING				
15.2.3.4	Use a word processing program to create and print a document.	E	Language Arts, Social Studies, Math, Science, Problem Solving, Critical Thinking	Bank St. Writer - Scholastic; Milliken Writing Workshop; Kidword - ASD, (any appropriate word processing program)	
15.2.3.5	Use a word processing program to edit a document. a) move cursor and make corrections b) insert and delete lines and text segments c) move, copy, and delete blocks of text	E	Language Arts, Social Studies, Math, Science, Problem Solving, Critical Thinking	any appropriate word processing program	
15.2.3.6	Use a word processing program to format a document. a) set and change margins, line spacing, and tabs b) set and change page formatting (layout) c) set and change printer options d) set and change paging and page numbers	E	Language Arts, Social Studies, Math, Science, Problem Solving, Critical Thinking	any appropriate word processing program	

* Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

COMPUTER EDUCATION: GRADE 4 OBJECTIVES

Upon completion of Grade 4:

COMPUTER EDUCATION: GRADE 4 OBJECTIVES		CORRELATION OF OBJECTIVES			
		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
Upon completion of Grade 4:					
15.2.3.7	Use a word processing program to perform searches and to make replacements.	E	Language Arts, Math Social Studies, Science, Problem Solving, Critical Thinking	any appropriate word processing program	
15.2.3.8	Save, delete, copy, and rename word processing files.	E	Language Arts, Math, Social Studies, Science, Problem Solving, Critical Thinking	any appropriate word processing program	
15.2.4	DATA BASES	E			
15.2.4.3	Identify examples of data base program applications.	I	Science, Social Studies, Language Arts, Math, Problem Solving, Critical Thinking	Classification - MECC; Bookworm - TIES; Stuff and Fetch - MECC (any appropriate data base programs)	ASD Library ROM Readers
15.2.4.4	Create a data base file.	E	Science, Social Studies, Language Arts, Math, Problem Solving, Critical Thinking	any appropriate data base program	
15.2.4.5	Edit a data base file. a) Insert records into a file b) Delete records from a file c) Change records in a file	E	Science, Social Studies, Language Arts, Math, Problem Solving, Critical Thinking	any appropriate data base program	

* Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

COMPUTER EDUCATION: GRADE 4 OBJECTIVES

Upon completion of Grade 4:

COMPUTER EDUCATION: GRADE 4 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 4:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.2.4.6	Format and print reports with a data base program. a) Create and print a tables-style report b) Create and print a labels-style report	E	Science, Social Studies, Language Arts, Math, Problem Solving, Critical Thinking	any appropriate data base program	
15.2.4.7	Do searches and sorts with a data base program.	E	Science, Social Studies, Language Arts, Math, Problem Solving, Critical Thinking	any appropriate data base program	
15.2.4.8	Save data base files.	E	Science, Social Studies, Language Arts, Math, Problem Solving, Critical Thinking	any appropriate data base program	
15.2.6	UTILITY PROGRAMS				
15.2.6.1	Uses utility program such as Crossword Magic and MECC Puzzles and Posters.	I	Language Arts, Math, Science, Social Studies	Elementary Vol. 2 - MECC; Crossword Magic - L&S Software	
15.3.1	USE COMPUTER IN INTERACTIVE MODE				
15.3.1.1	Use introductory graphics programs such as Delta Drawing or Bumble Games.	R	Problem Solving, Critical Thinking	Mr. Pixel - Mindscape; Delta Drawing - Spinnaker	

* Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

COMPUTER EDUCATION: GRADE 4 OBJECTIVES

Upon completion of Grade 4:

COMPUTER EDUCATION: GRADE 4 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 4:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.3.1.2	Use programming readiness programs such as Creature Creator.	R	Problem Solving, Critical Thinking	E-Z Pilot - TIES; Gertrude's Puzzles - Learning Co.	TIES Computer Literacy Kit Step 2; Apple Logo in the Classroom - MECC (with Apple LOGO)
15.3.1.4	Use thinking skills programs such as The Pond, Gertrude's Puzzles, and Factory.	E	Problem Solving, Critical Thinking	The Pond - Sunburst; Factory - Sunburst; Mind Puzzles - MECC	Memory: 1st Step - Sunburst; Discrimination: 2nd Step - Sunburst; Guessing and Thinking - MECC
15.4.2	SOCIETAL IMPACTS				
15.4.2.1	Identifies ways of using computers which do not neglect or violate the rights of others.	R	Language Arts, Math, Science, Social Studies	Piracy - ASD	TIES Computer Literacy Kit Step 2; Hunter, Beverly. My Students use Computers, Reston Pub., 1983
15.4.2.2	Describes advantages and disadvantages of using computers.	R	Language Arts, Math, Science, Social Studies		TIES Computer Literacy Kit Step 2; Hunter, Beverly. My Students use Computers, Reston Pub., 1983
15.4.2.3	Describes legal and ethical uses of computers.	R	Language Arts, Math, Science, Social Studies	Piracy - ASD	TIES Computer Literacy Kit Step 2; Hunter, Beverly. My Students use Computers, Reston Pub., 1983

* Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

COMPUTER EDUCATION: GRADE 4 OBJECTIVES

Upon completion of Grade 4:

15.4.4	ATTITUDES				
15.4.4.2	Displays positive attitudes towards computers and computer applications.	R	Language Arts, Math, Science, Social Studies		TIES Computer Literacy Kit Step 2; Hunter, Beverly. <u>My Students use Computers</u> , Reston Pub., 1983

COMPUTER EDUCATION

SCOPE

FOR

GRADE 5

Anchorage School District
Division of Instruction
Curriculum Development Department

July 1985

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NUMBERING OF GOALS AND OBJECTIVES

To facilitate identification of goals and objectives, each curriculum area has been assigned a number:

Science	2
Social Studies	3
Mathematics	4
Language Arts/Reading	5

Goal numbers are identified by a two-part code. Goal 2.3 refers to Science, third goal; 4.1 refers to Mathematics, first goal, etc.

Program objectives are identified by a three-part code number. Example:

5.2.3 refers to Language Arts/Reading, second goal, third program objective.

4.1.2 refers to Mathematics, first goal, second program objective.

Instructional objectives are identified by a four-part code number. Example:

3.1.5.2 refers to Social Studies, first goal, fifth program objective, second instructional objective.

INSTRUCTION SYMBOLS

Each objective has been assigned a letter which represents the type of instruction which is to take place.

<u>Symbol</u>	<u>Definition</u>
I	The skills, knowledge and/or values related to the objective are first introduced into the instructional program at this level.
E	The skills, knowledge and/or values related to the objective are expanded to provide students new insights and/or broader applications.
R	The skills, knowledge and/or values related to the objective are reviewed and reinforced at this level.

COMPUTER EDUCATION

PROGRAM STATEMENT

Computer skills are essential for every individual in today's technological society. Everyone needs to have the knowledge, skills, and attitudes that will enable them to effectively utilize computers. The Computer Instructional Program of the Anchorage School District will provide the opportunity for all students to learn to use computers and to develop positive attitudes, values, and motivation toward computers and their applications as appropriate for each individual's age, needs, and desires.

PROGRAM PHILOSOPHY

The Anchorage School District supports the belief that:

1. Computer skills should be integrated throughout the curriculum.
2. Computers should be used by students for both guided and independent practice.
3. Computers should be used by students to reinforce and extend the skills and concepts taught in the classroom.
4. Computers should be used by teachers to teach and/or demonstrate selected skills and concepts, to assist with record keeping and the generation of classroom materials, and to assist with diagnosis and evaluation of student learning.
5. Computers should be used to teach problem solving skills and other computer related skills such as word processing, data processing, information retrieval, business and personal finance, and programming.
6. The Computer Instructional Program needs to be viewed as a flexible program due to rapidly changing technology.

PROGRAM GOALS

- 15.1 The student is able to understand and use the vocabulary, definitions, and procedures associated with computers, their operation, and the operation of their peripherals as appropriate to needs and interests.
- 15.2 The student is able to associate computers with appropriate areas of application, effectively select and utilize application software, and apply this knowledge in solving problems.
- 15.3 The student is able to understand the nature and purpose of computer languages and programming, to develop and write computer programs as appropriate to needs and interest, and to apply this knowledge in solving problems.
- 15.4 The student is familiar with the development of computing devices; is aware of the impact of technology on society; is aware of career, vocational, home, and recreational uses of computers; displays positive attitudes towards computers; and understands the emerging roles of computers and their effective use in a changing society.

COMPUTER EDUCATION
BASIC FIFTH GRADE SKILLS

Uses computer terms such as computer, monitor, keyboard, disk drive, printer, memory, cursor, boot, menu, disk, program, input, output, documentation, chip, slot, port, 80-column card, interface.

Identifies functions of disk drive, monitor, printer, disks, RAM, ROM, CPU, ALU; recognizes need for hardware/software compatibility.

Properly and appropriately uses disks, computer, keyboard, disk drive, and printer; uses touch typing for word processing.

Turns computer on and off; boots and reboots disk by using [CONTROL][OPEN APPLE][RESET].

Does minor troubleshooting (reseats and reboots disk if disk doesn't boot, checks to be sure everything is plugged in, adjusts monitor); locates information in operating manuals.

Runs programs from a menu.

Uses a printer; uses other peripheral devices such as graphics tablet, robotic device, or programmable toy if they are available.

Uses problem solving/creative thinking programs such as Snooper Troops, Incredible Laboratory.

Uses a word processing program.

Uses a data base program.

Uses a spreadsheet program.

Uses puzzle and poster generator programs.

Describes advantages and disadvantages of using computers; describes legal and ethical uses of computers.

Writes programs in BASIC or Logo (optional).

COMPUTER EDUCATION: GRADE 5 OBJECTIVES

Upon completion of Grade 5:

COMPUTER EDUCATION: GRADE 5 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 5:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.1	COMPUTER TERMINOLOGY				
15.1.1.1	Use hardware terms such as computer, monitor, disk drive, keyboard, and printer.	R	Language Arts, Math, Science, Social Studies	Know Your Apple - Muse; Computer Vocabulary - TIES (any appropriate software)	TIES Computer Literacy Kit Step 3
15.1.1.2	Use names of components of a computer system such as memory, input, output, chip, slot, and port.	E	Language Arts, Math, Science, Social Studies	Know Your Apple - Muse; Computer Vocabulary - TIES (any appropriate software)	TIES Computer Literacy Kit Step 3
15.1.1.3	Use operation terms such as cursor, boot, menu, and catalog.	R	Language Arts, Math, Science, Social Studies	Know Your Apple - Muse; Apple Presents Apple - Apple; (any appropriate software)	TIES Computer Literacy Kit Step 3
15.1.1.4	Use software terms such as disk, program, and documentation.	R	Language Arts, Math, Science, Social Studies	Know Your Apple - Muse; Computer Vocabulary - TIES (any appropriate software)	TIES Computer Literacy Kit Step 3
15.1.1.5	Use firmware terms such as interface and 80 column card.	I	Language Arts, Math, Science, Social Studies	Know Your Apple - Muse; Appleworks - Apple; (any appropriate software)	TIES Computer Literacy Kit Step 3

* Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

COMPUTER EDUCATION: GRADE 5 OBJECTIVES

Upon completion of Grade 5:

COMPUTER EDUCATION: GRADE 5 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 5:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.2	FUNCTIONS OF COMPONENTS				
15.1.2.1	Describes meaning and function of RAM (random access memory), ROM (read only memory), CPU (central processing unit), and ALU (arithmetic logic unit).	I	Language Arts, Math, Science, Social Studies	Know Your Apple - Muse; Computer Vocabulary - TIES (any appropriate software)	TIES Computer Literacy Kit: Step 3
15.1.2.2	Identifies function of disk drive, monitor, and printer.	R	Language Arts, Math, Science, Social Studies	Know Your Apple - Muse; Print Shop - Broderbund	TIES Computer Literacy Kit: Step 3
15.1.2.3	Identifies function of disk.	R	Language Arts, Math, Science, Social Studies	Know Your Apple - Muse; Bank St. Writer - Broderbund	TIES Computer Literacy Kit: Step 3
15.1.3	CARE AND HANDLING				
15.1.3.1	Handles disks carefully; properly stores disks.	R	Language Arts, Math, Science, Social Studies	Know Your Apple - Muse; Computer Vocabulary - TIES (any appropriate software)	TIES Computer Literacy Kit: Step 3
15.1.3.2	Uses keyboard properly.	R	Language Arts, Math, Science, Social Studies	Know Your Apple - Muse; Apple Presents Apple - Apple; (any appropriate software)	TIES Computer Literacy Kit: Step 3

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COMPUTER EDUCATION: GRADE 5 OBJECTIVES

Upon completion of Grade 5:

CORRELATION OF OBJECTIVES

		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.3.3	Uses computer properly (i.e., no jarring, bumping, or dirty hands); grounds self before using computer.	R	Language Arts, Math, Science, Social Studies	Know Your Apple - Muse; Computer Vocabulary - TIES (any appropriate software)	TIES Computer Literacy Kit Step 3
15.1.3.4	Uses disk drive and printer properly.	R	Language Arts, Math, Science, Social Studies	Bank St. Writer - Scholastic; Milliken Writing Workshop - Milliken; Print Shop - Broderbund; (any appropriate software)	
15.1.4	OPERATE A COMPUTER				
15.1.4.1	Boots a disk.	R	Language Arts, Math, Science, Social Studies	(any appropriate software)	TIES Computer Literacy Kit Step 3
15.1.4.2	Runs programs from a menu.	R	Language Arts, Math, Science, Social Studies	Quotient Quest - MECC; Freewriter - Pub. Dom.; (any appropriate software)	TIES Computer Literacy Kit Step 3
15.1.4.3	Breaks out of a program by using ESC key or [CTRL][C]; reboots disk by using [CONTROL][OPEN APPLE][RESET].	E	Language Arts, Math, Science, Social Studies	Discovery Lab - MECC; (any appropriate software)	TIES Computer Literacy Kit Step 3

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COMPUTER EDUCATION: GRADE 5 OBJECTIVES

Upon completion of Grade 5:

		CORRELATION OF OBJECTIVES		
	*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.4.4	E	Language Arts, Math, Science, Social Studies	Apple Introduces Apple or Apple Presents Apple - Apple; Typing Tutor III - Microsoft; Alphabetic Keyboarding - South-Western Pub. (any appropriate software)	TIES Computer Literacy Kit Step 3
15.1.4.5	E	Language Arts, Math, Science, Social Studies	(any appropriate software)	Microcomputer X-perts booklet - ASD
15.1.4.6	E	Language Arts, Math, Science, Social Studies	Print Shop - Broderbund; Puzzles & Posters - MECC; Crossword Magic - L&S Software	
15.1.4.7	I	Language Arts, Math, Science, Social Studies	Snooper Troops - Spinnaker (any appropriate software)	Hunter, Beverly. My Students Use Computers, Reston Pub., 1983

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COMPUTER EDUCATION: GRADE 5 OBJECTIVES

Upon completion of Grade 5:

COMPUTER EDUCATION: GRADE 5 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 5:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.5	PERIPHERAL DEVICES				
15.1.5.1	Uses graphics pad such as the Koala Pad as input device.	R	Art; Illustrate (optional) programs	Micro-Illustrator - Koala; Print Shop - Broderbund; Bank St. Storybook - Mindscapes	Koala Pad; Power Pad
15.1.5.2	Uses a printer as output device.	R	Language Arts, Math, Science, Social Studies	Bank St. Writer - Scholastic; Kidword - ASD; Print Shop - Broderbund	
15.1.5.3	Uses robotic devices such as the LOGO turtle or FRED.	R	Problem Solving, Critical Thinking	LOGO	
15.2.3	WORD PROCESSING PROGRAMS				
15.2.3.4	Use a word processing program to create and print a document.	E	Language Arts, Social Studies, Science, Math, Problem Solving, Critical Thinking	Bank Street Writer - Scholastic; Writing Workshop - Milliken; Kidword - ASD; Appleworks - Apple (any appropriate word processing program)	TIES Computer Literacy Kit - Step 3
15.2.3.5	Use a word processing program to edit a document. a) move cursor and make corrections b) insert and delete lines and text segments c) move, copy, and delete blocks of text.	E	Language Arts, Social Studies, Science, Math, Problem Solving, Critical Thinking	any appropriate word processing program	

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COMPUTER EDUCATION: GRADE 5 OBJECTIVES

Upon completion of Grade 5:

COMPUTER EDUCATION: GRADE 5 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 5:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.2.3.6	Use a word processing program to format a document. a) set and change margins, line spacing, and tabs b) set and change page formatting (layout) c) set and change printer options d) set and change paging and page numbers	E	Language Arts, Social Studies, Science, Math, Problem Solving, Critical Thinking	any appropriate word processing program	
15.2.3.7	Use a word processing program to perform searches and to make replacements.	E	Language Arts, Social Studies, Science, Math, Problem Solving, Critical Thinking	any appropriate word processing program	
15.2.3.8	Save, delete, copy, and rename word processing files.	E	Language Arts, Social Studies, Science, Math, Problem Solving, Critical Thinking	any appropriate word processing program	
15.2.4	DATA BASE PROGRAMS				
15.2.4.4	Create a data base file	E	Language Arts, Social Studies, Science, Math, Problem Solving, Critical Thinking	Book Worm - MECC; Stuff and Fetch - MECC; Trivia Machine - MECC; Friendly Filer - Grolier; Create-A-Base - Grolier (any appropriate data base program)	ASD Library ROM Readers

* Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

COMPUTER EDUCATION: GRADE 5 OBJECTIVES

Upon completion of Grade 5:

COMPUTER EDUCATION: GRADE 5 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 5:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.2.4.5	Edit a data base file a) Insert records into a file b) Delete records from a file c) Change records in a file	E	Language Arts, Social Studies, Science, Math, Problem Solving, Critical Thinking	any appropriate data base program	
15.2.4.6	Format and print report with a data base program a) Create and print a tables-style report b) Create and print a labels-style report	E	Language Arts, Social Studies, Science, Math, Problem Solving, Critical Thinking	any appropriate data base program	
15.2.4.7	Do searches and sorts with a data base program.	E	Language Arts, Social Studies, Science, Math, Problem Solving, Critical Thinking	any appropriate data base program	
15.2.4.8	Save data base files.	E	Language Arts, Social Studies, Science, Math, Problem Solving, Critical Thinking	any appropriate data base program	
15.2.5	SPREADSHEET PROGRAMS		Math, Science, Social Studies, Problem Solving, Creative Thinking	Appleworks - Apple; Basicalc - Public Domain; Sem Calc - Sunburst (any appropriate spreadsheet program)	
15.2.5.1	Identify characteristics and functions of spreadsheet programs.				

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COMPUTER EDUCATION: GRADE 5 OBJECTIVES

Upon completion of Grade 5:

COMPUTER EDUCATION: GRADE 5 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 5:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.2.5.4	Plan and create a worksheet with a spreadsheet program. a) Move cursor to make entries b) Use labels as entries c) Use values as entries d) Use formulas as entries e) Replicate and copy entries	I	Math, Science, Social Studies, Problem Solving, Creative Thinking	Appleworks - Apple; Basicalc - Public Domain; Sam Calc - Sunburst (any appropriate spreadsheet program)	
15.2.5.5	Edit a worksheet with a spreadsheet program a) Insert and delete rows and columns b) Change entries c) Move columns and rows d) Calculate new values	I	Math, Science, Social Studies, Problem Solving, Creative Thinking	any appropriate spreadsheet program	
15.2.5.6	Print reports with a spreadsheet program a) Determine information to include	I	Math, Science, Social Studies, Problem Solving, Creative Thinking	any appropriate spreadsheet program	
15.2.5.7	Save spreadsheet files	I	Math, Science, Social Studies, Problem Solving, Creative Thinking	any appropriate spreadsheet program	
15.2.6	UTILITY PROGRAMS				
15.2.6.1	Uses utility programs such as Crossword Magic and MECC Word Find.	E	Language Arts, Math, Science, Social Studies	Game Show - Computer Advanced Ideas; Puzzles and Posters - MECC	

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COMPUTER EDUCATION: GRADE 5 OBJECTIVES

Upon completion of Grade 5:

COMPUTER EDUCATION: GRADE 5 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 5:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.3.1	USE COMPUTER IN INTERACTIVE MODE				
15.3.1.4	Use thinking skills programs such as Snooper Troops and Incredible Laboratory.	E	Problem Solving, Critical Thinking	Problem Solving Strategies - MECC; Snooper Troops - Spinnaker; Incredible Laboratory - Sunburst	Memory: 1st Step - Sunburst; Discrimination: 2nd Step - Sunburst
15.3.2	NATURE AND PURPOSE OF COMPUTER LANGUAGES				
15.3.2.2	Describes purpose of computer programs.	I		Three R's of Microcomputing - MECC	New Step by Step - Program Design; TIES Computer Literacy Kit Step 3. Hunter, Beverly. <u>My Students use Computers</u> . Reston Pub., 1983
15.3.2.3	Describes relationship between a program and its output.	I		Three R's of Microcomputing - MECC	New Step by Step - Program Design; TIES Computer Literacy Kit Step 3; Hunter, Beverly. <u>My Students use Computers</u> . Reston Pub., 1983
15.3.3	PROGRAMMING				
15.3.3.1	Is familiar with BASIC or Logo. a) Enter and run programs from the keyboard b) Use system commands for BASIC or Logo c) Interrupt and stop programs during execution d) Store and retrieve programs	O	Computers, Math, Problem Solving, Critical Thinking	LOGO - Apple; Mouse in Maze - MECC; Experiencing Procedures - MECC Programming Special Projects - MECC; Basic - TIES	Beginning Basic - MECC; Apple Logo in the Classroom - MECC New Step-by-Step - Program Design; TIES Computer Literacy Kit Step 3

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COMPUTER EDUCATION: GRADE 5 OBJECTIVES

Upon completion of Grade 5:

COMPUTER EDUCATION: GRADE 5 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 5:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.3.3.3	Write programs in BASIC or Logo which include arithmetic operations. a) Use addition (+), subtraction (-), multiplication (x), division (/), and exponentiation () b) Use algebraic order of operations c) Use parentheses in computations d) Use numeric variables	0	Computers, Math, Problem Solving, Critical Thinking	LOGO - Apple; Mouse in Maze - MECC; Experiencing Procedures - MECC, Programming Special Projects - MECC; BASIC - TIES	Beginning Basic - MECC; Apple Logo in the Classroom - MECC, New Step-by-Step - Program Design; TIES Computer Literacy Kit Step 3
15.3.3.4	Write programs in BASIC or Logo which include input/output commands and statements; format input and output.	0	Computers, Math, Problem Solving, Critical Thinking	LOGO - Apple; Mouse in Maze - MECC; Experiencing Procedures - MECC, Programming Special Projects - MECC; BASIC - TIES	Beginning Basic - MECC; Apple Logo in the Classroom - MECC, New Step-by-Step - Program Design; TIES computer Literacy Kit Step 3
15.3.3.5	Write programs BASIC or Logo which include conditional and unconditional statements. a) Use GOTO statements b) Use IF ... THEN statements c) Understand and use the relational operators = (is equal to), < > (is not equal to), <= (is less than or equal to), >= (is greater than or equal to), < (is less than), and > (is greater than).	0	Computers, Math, Problem Solving, Critical Thinking	LOGO - Apple; Mouse in Maze - MECC; Experiencing Procedures - MECC; BASIC - TIES	Beginning Basic - MECC; Apple Logo in the classroom - MECC; New Step-by-Step - Program Design; Ties Computer Literacy Step 3
15.3.3.6	Write programs BASIC or Logo which include loops. a) Use FOR ... NEXT or REPEAT statements.	0	Computers, Math, Problem Solving, Critical Thinking	Logo - Apple; Mouse in Maze - MECC; Experiencing Procedures - MECC; BASIC - TIES	Beginning Basic - MECC; Apple Logo in the classroom - MECC; New Step-by-Step - Program Design; Ties Computer Literacy Step 3

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COMPUTER EDUCATION: GRADE 5 OBJECTIVES

Upon completion of Grade 5:

COMPUTER EDUCATION: GRADE 5 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 5:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.3.3.10	Write programs in BASIC or Logo which include character strings and the use of string variables. a) Use string variables b) Use string functions	O	Computers, Math, Problem Solving, Critical Thinking	LOGO - Apple; Mouse in Maze - MECC; Experiencing Procedures - MECC; BASIC - TIES	Beginning Basic - MECC; Apple Logo in the Classroom - MECC; New Step-by-Step - Program Design; Ties Computer Literacy Step 3
15.3.3.11	Write programs in Logo which include the use of procedures.	O	Computers, Math, Problem Solving, Critical Thinking	LOGO - Apple; Mouse in Maze - MECC; Experiencing Procedures - MECC;	Apple Logo in the Classroom - MECC;
15.3.3.14	Write programs in BASIC or Logo which include the use of graphics.	O	Computers, Math, Problem Solving, Critical Thinking	LOGO - Apple; Mouse in Maze - MECC; Experiencing Procedures - MECC	Apple Logo in the Classroom - MECC
15.4.2	SOCIETAL IMPACTS				
15.4.2.1	Identifies ways of using computers which do not neglect or violate the rights of others.	R	Language Arts, Math, Science, Social Studies	Piracy - ASD	TIES Computer Literacy Kit Step 3; Hunter, Beverly. <u>My Students use Computers</u> , Reston Pub., 1983
15.4.2.2	Describes advantages and disadvantages of using computers.	R	Language Arts, Math, Science, Social Studies		TIES Computer Literacy Kit Step 3; Hunter, Beverly. <u>My Students use Computers</u> , Reston Pub., 1983

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COMPUTER EDUCATION: GRADE 5 OBJECTIVES

Upon completion of Grade 5:

<u>COMPUTER EDUCATION: GRADE 5 OBJECTIVES</u>		CORRELATION OF OBJECTIVES			
Upon completion of Grade 5:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.4.2.3	Describes legal and ethical uses of computers.	R	Language Arts, Math, Science, Social Studies	Piracy - ASD	TIES Computer Literacy Kit Step 3; Hunter, Beverly. <u>My Students Use Computers</u> . Reston Pub., 1983
15.4.4	ATTITUDES				
15.4.4.2	Displays positive attitudes towards computers and computer applications.	R	Language Arts, Math, Science, Social Studies		TIES Computer Literacy Kit Step 3; Hunter, Beverly. <u>My Students Use Computers</u> . Reston Pub., 1983

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* Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

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COMPUTER EDUCATION

SCOPE

FOR

GRADE 6

Anchorage School District
Division of Instruction
Curriculum Development Department

July 1985

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NUMBERING OF GOALS AND OBJECTIVES

To facilitate identification of goals and objectives, each curriculum area has been assigned a number:

Science	2
Social Studies	3
Mathematics	4
Language Arts/Reading	5

Goal numbers are identified by a two-part code. Goal 2.3 refers to Science, third goal; 4.1 refers to Mathematics, first goal, etc.

Program objectives are identified by a three-part code number. Example:

5.2.3 refers to Language Arts/Reading, second goal, third program objective.

4.1.2 refers to Mathematics, first goal, second program objective.

Instructional objectives are identified by a four-part code number. Example:

3.1.5.2 refers to Social Studies, first goal, fifth program objective, second instructional objective.

INSTRUCTION SYMBOLS

Each objective has been assigned a letter which represents the type of instruction which is to take place.

<u>Symbol</u>	<u>Definition</u>
I	The skills, knowledge and/or values related to the objective are first introduced into the instructional program at this level.
E	The skills, knowledge and/or values related to the objective are expanded to provide students new insights and/or broader applications.
R	The skills, knowledge and/or values related to the objective are reviewed and reinforced at this level.

COMPUTER EDUCATION

PROGRAM STATEMENT

Computer skills are essential for every individual in today's technological society. Everyone needs to have the knowledge, skills, and attitudes that will enable them to effectively utilize computers. The Computer Instructional Program of the Anchorage School District will provide the opportunity for all students to learn to use computers and to develop positive attitudes, values, and motivation toward computers and their applications as appropriate for each individual's age, needs, and desires.

PROGRAM PHILOSOPHY

The Anchorage School District supports the belief that:

1. Computer skills should be integrated throughout the curriculum.
2. Computers should be used by students for both guided and independent practice.
3. Computers should be used by students to reinforce and extend the skills and concepts taught in the classroom.
4. Computers should be used by teachers to teach and/or demonstrate selected skills and concepts, to assist with record keeping and the generation of classroom materials, and to assist with diagnosis and evaluation of student learning.
5. Computers should be used to teach problem solving skills and other computer related skills such as word processing, data processing, information retrieval, business and personal finance, and programming.
6. The Computer Instructional Program needs to be viewed as a flexible program due to rapidly changing technology.

PROGRAM GOALS

- 15.1 The student is able to understand and use the vocabulary, definitions, and procedures associated with computers, their operation, and the operation of their peripherals as appropriate to needs and interests.
- 15.2 The student is able to associate computers with appropriate areas of application, effectively select and utilize application software, and apply this knowledge in solving problems.
- 15.3 The student is able to understand the nature and purpose of computer languages and programming, to develop and write computer programs as appropriate to needs and interest, and to apply this knowledge in solving problems.
- 15.4 The student is familiar with the development of computing devices; is aware of the impact of technology on society; is aware of career, vocational, home, and recreational uses of computers; displays positive attitudes towards computers; and understands the emerging roles of computers and their effective use in a changing society.

COMPUTER EDUCATION
BASIC SIXTH GRADE SKILLS

Uses computer terms such as computer, monitor, keyboard, disk drive, printer, memory, cursor, boot, menu, disk, program, input, output, documentation, chip, slot, port, 80-column card, interface, peripheral, terminal.

Identifies functions of disk drive, monitor, printer, disks, RAM, ROM, CPU, ALU; recognizes need for hardware/software compatibility.

Properly and appropriately uses disks, computer, keyboard, disk drive, and printer; uses touch typing for word processing.

Turns computer on and off; boots and reboots disk by using [CONTROL][OPEN APPLE][RESET].

Does minor troubleshooting (reseats and reboots disk if disk doesn't boot, checks to be sure everything is plugged in, adjusts monitor); locates information in operating manuals.

Uses a printer; uses other peripheral devices such as graphics tablet, robotic device, or programmable toy if they are available.

Uses problem solving/creative thinking programs such as Snooper Troops, Rocky's Boots.

Identifies uses of computers in careers, vocations, school, home, recreation.

Uses a word processing program.

Uses a data base program.

Uses a spreadsheet program.

Uses puzzle and poster generator programs.

Describes advantages and disadvantages of using computers; describes legal and ethical uses of computers; identifies technological changes and advances which have led to different generations of computers; describes latest developments in computer related technologies.

Writes programs in BASIC or Logo (optional).

COMPUTER EDUCATION: GRADE 6 OBJECTIVES

Upon completion of Grade 6:

CORRELATION OF OBJECTIVES

		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.1	COMPUTER TERMINOLOGY				
15.1.1.1	Use hardware terms such as computer, monitor, disk drive, keyboard, printer, peripheral, modem, and terminal.	E	Language Arts, Math, Science, Social Studies	Know Your Apple - MUSE; Computer Vocabulary - TIES (any appropriate software)	TIES Computer Literacy Kit Step 3
15.1.1.2	Use names of components of a computer system such as memory, input, output, chip, slot, and port.	R	Language Arts, Math, Science, Social Studies	Know Your Apple - MUSE; Computer Vocabulary - TIES (any appropriate software)	TIES Computer Literacy Kit Step 3
15.1.1.4	Use software terms such as disk, program, and documentation.	R	Language Arts, Math, Science, Social Studies	Know Your Apple - MUSE; Computer Vocabulary - TIES (any appropriate software)	TIES Computer Literacy Kit Step 3
15.1.1.5	Use firmware terms such as interface, language card, RAM card, and 80 column card.	R	Language Arts, Math, Science, Social Studies	Know Your Apple - MUSE; Computer Vocabulary - TIES APPLEWORKS - Apple; (any appropriate software)	TIES Computer Literacy Kit Step 3
15.1.2	FUNCTIONS OF COMPONENTS				
15.1.2.1	Describes meaning and function of RAM (random access memory), ROM (read only memory), CPU (central processing unit), and ALU (arithmetic logic unit).	R	Language Arts, Math, Science, Social Studies	Know Your Apple - MUSE; Computer Vocabulary - TIES	TIES Computer Literacy Kit Step 3

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COMPUTER EDUCATION: GRADE 6 OBJECTIVES

Upon completion of Grade 6:

COMPUTER EDUCATION: GRADE 6 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 6:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.2.2	Identifies function of disk drive, monitor, and printer.	R	Language Arts, Math, Science, Social Studies	Printshop - Broderbund; Know Your Apple - MUSE; Computer Vocabulary - TIES; Newsroom - Springboard	TIES Computer Literacy Kit Step 3
15.1.2.3	Identifies function of disk.	R	Language Arts, Math, Science, Social Studies	Know Your Apple - MUSE; Computer Vocabulary - TIES; Newsroom - Springboard	TIES Computer Literacy Kit Step 3
15.1.3	CARE AND HANDLING				
15.1.3.1	Handles disks carefully; properly stores disks.	R	Language Arts, Math, Science, Social Studies	Know Your Apple - MUSE; Computer Vocabulary - TIES (any appropriate software)	TIES Computer Literacy Kit Step 3
15.1.3.2	Uses keyboard properly.	R	Language Arts, Math, Science, Social Studies	Know Your Apple - MUSE; Computer Vocabulary - TIES; Apple Presents Apple - Apple; (any appropriate software)	TIES Computer Literacy Kit Step 3
15.1.3.3	Uses computer properly (i.e., no jarring, bumping, or dirty hands); grounds self before using computer.	R	Language Arts, Math, Science, Social Studies	Know Your Apple - MUSE; Computer Vocabulary - TIES; (any appropriate software)	TIES Computer Literacy Kit Step 3

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COMPUTER EDUCATION: GRADE 6 OBJECTIVES

Upon completion of Grade 6:

		CORRELATION OF OBJECTIVES		
	*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.3.4 Uses disk drive and printer properly.	R	Language Arts, Math, Science, Social Studies	Newsroom - Springboard; Bank St. Writer - Scholastic; Quill - D.C. Heath; Know Your Apple - MUSE; Printshop - Broderbund; (any appropriate software)	
15.1.4 OPERATE A COMPUTER				
15.1.4.1 Boots a disk.	R	Language Arts, Math, Science, Social Studies	Know Your Apple - MUSE; (any appropriate software)	TIES Computer Literacy Kit Step 3
15.1.4.2 Runs programs from a menu.	R	Language Arts, Math, Science, Social Studies	Printshop - Broderbund; Know Your Apple - MUSE; Freewriter - Pub. Dom.; (any appropriate software)	TIES Computer Literacy Kit Step 3
15.1.4.3 Breaks out of a program by using ESC key, [CTRL][C] or [CTRL][RESET]; reboots disk by using [CONTROL][OPEN APPLE][RESET].	E	Language Arts, Math, Science, Social Studies	Know Your Apple - MUSE; Discovery Lab - MECC; (any appropriate software)	TIES Computer Literacy Kit Step 3
15.1.4.4 Demonstrates correct use of RETURN, space bar, shift, ESC, DELETE, CAPS LOCK, arrow keys, [CONTROL][OPEN APPLE][RESET] and closed apple keys; uses touch typing skills, especially when using word processing programs.	E	Language Arts, Math, Science, Social Studies	Apple Presents Apple - Apple; Typing Tutor III - Microsoft; Alphabetic Keyboarding - South-Western Pub. (any appropriate software)	TIES Computer Literacy Kit Step 3

* Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

COMPUTER EDUCATION: GRADE 6 OBJECTIVES

Upon completion of Grade 6:

COMPUTER EDUCATION: GRADE 6 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 6:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.4.5	Is able to reboot and/or reseat disk and reboot if disk does not boot; reboots disk if program bombs by using [CONTROL][OPEN APPLE][RESET]; checks that hardware is plugged in if computer, monitor, or printer is not working; makes color and image adjustments to monitor.	R	Language Arts, Math, Science, Social Studies		TIES Computer Literacy Kit Step 3
15.1.4.6	Recognizes need for hardware-software compatibility.	R	Language Arts, Math, Science, Social Studies	Printshop - Broderbund; Puzzles & Posters - MECC; Crossword Magic - L&S	
15.1.4.7	Locates information in operating manuals.	E	Language Arts, Math, Science, Social Studies	In Search of the Most Amazing Thing - Spinnaker	Hunter, Beverly My Students Use Computers, Reston Pub., 1983
15.1.5	PERIPHERAL DEVICES				
15.1.5.1	Uses graphics pad such as the Koala Pad and modem as input devices.	E	Art; Social Studies/ information access	Electronic Village - EXSYS; Quill - DC Heath; Hayes Smartcom; Newsroom - Springboard; Printshop - Broderbund; Bank St. Storybook - Mindscape	Koala Pad; Power Pad; Applemodem; Hayes Smartmodem

* Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

COMPUTER EDUCATION: GRADE 6 OBJECTIVES

Upon completion of Grade 6:

COMPUTER EDUCATION: GRADE 6 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 6:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.1.5.2	Uses a printer and modem as output devices.	E	Language Arts, Math, Science, Social Studies	Newsroom - Springboard; Smartcom - Hays; Quill - D.C. Heath; Word Processing Activities - TIES; Electronic Village - EXSYS	Applemodem; Hayes Smartmodem
15.1.5.3	Uses robotic devices such as the LOGO turtle or programmable robots.	E	Problem Solving, Critical Thinking	LOGO; Turtle Tot	
15.2.3	WORD PROCESSING PROGRAMS				
15.2.3.4	Use a word processing program to create and print a document.	E	Language Arts, Social Studies, Science, Math, Problem Solving, Critical Thinking	Bank Street Writer - Scholastic; Writing Workshop - Milliken; Kidword - ASD; Appleworks - Apple; Magic Slate - Sunburst; Word Processing Activities - TIES; MECC Writer - MECC (any appropriate word processing program)	TIES Computer Literacy Kit - Step 3
15.2.3.5	Use a word processing program to edit a document. a) move cursor and make corrections b) insert and delete lines and text segments c) move, copy, and delete blocks of text	E	Language Arts, Social Studies, Science, Math, Problem Solving, Critical Thinking	any appropriate word processing program	

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COMPUTER EDUCATION: GRADE 6 OBJECTIVES

Upon completion of Grade 6:

COMPUTER EDUCATION: GRADE 6 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 6:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.2.3.6	Use a word processing program to format a document. a) set and change margins, line spacing, and tabs b) set and change page formatting (layout) c) set and change printer options d) set and change paging and page numbers	E	Language Arts, Social Studies, Math, Science, Problem Solving, Critical Thinking	any appropriate word processing program	
15.2.3.7	Use a word processing program to perform searches and to make replacements.	E	Language Arts, Social Studies, Math, Science, Problem Solving, Critical Thinking	any appropriate word processing program	
15.2.3.8	Save, delete, copy, and rename word processing files.	E	Language Arts, Social Studies, Math, Science, Problem Solving, Critical Thinking	any appropriate word processing program	
15.2.4	DATA BASE PROGRAMS				
15.2.4.1	Identify characteristics and functions of data base programs.	I	Science, Social Studies, Math, Language Arts, Problem Solving, Critical Thinking	Stuff and Fetch - MECC; Friendly Filer - Grolier; Create-A-Base - Grolier; Data Handler - MECC; Classification - MECC; Appleworks - Apple (any appropriate data base program)	ASD Library ROM Readers; TIES Computer Literacy Kit Step 3; Hunter, Beverly, <u>My Students Use Computers</u> - Reston Pub. 1983

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COMPUTER EDUCATION: GRADE 6 OBJECTIVES

Upon completion of Grade 6:

COMPUTER EDUCATION: GRADE 6 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 6:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.2.4.3	Identify examples of data base program applications.	E	Science, Social Studies, Math, Language Arts, Problem Solving, Critical Thinking	any appropriate data base program	
15.2.4.4	Create a data base file.	E	Science, Social Studies, Math, Language Arts, Problem Solving, Critical Thinking	any appropriate data base program	
15.2.4.5	Edit a data base file a) Insert records into a file b) Delete records from a file c) Change records in a file	E	Science, Social Studies, Math, Language Arts, Problem Solving, Critical Thinking	any appropriate data base program	
15.2.4.6	Format and print report with a data base program a) Create and print a tables-style report b) Create and print a labels-style report	E	Science, Social Studies, Math, Language Arts, Problem Solving, Critical Thinking	any appropriate data base program	
15.2.4.7	Do searches and sorts with a data base program.	E	Science, Social Studies, Math, Language Arts, Problem Solving, Critical Thinking	any appropriate data base program	

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COMPUTER EDUCATION: GRADE 6 OBJECTIVES

Upon completion of Grade 6:

COMPUTER EDUCATION: GRADE 6 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 6:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.2.4.8	Save data base files.	E	Science, Social Studies, Math, Language Arts, Problem Solving, Critical Thinking	any appropriate data base program	
15.2.5	SPREADSHEET PROGRAMS				
15.2.5.1	Identify characteristics and functions of spreadsheet programs.	E	Math, Science, Social Studies, Problem Solving, Critical Thinking	SemCalc - Sunburst; Basicalc - Public Domain; Appleworks - Apple, (any appropriate spreadsheet program)	
15.2.5.3	Identify examples of spreadsheet applications.	I	Math, Science, Social Studies, Problem Solving, Critical Thinking	any appropriate spreadsheet program	
15.2.5.4	Plan and create a worksheet with a spreadsheet program. a) Move cursor to make entries b) Use labels as entries c) Use values as entries d) Use formulas as entries e) Replicate and copy entries	I	Math, Science, Social Studies, Problem Solving, Critical Thinking	any appropriate spreadsheet program	

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COMPUTER EDUCATION: GRADE 6 OBJECTIVES

Upon completion of Grade 6:

COMPUTER EDUCATION: GRADE 6 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 6:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.2.5.5	Edit a worksheet with a spreadsheet program a) Insert and delete rows and columns b) Change entries c) Move columns and rows d) Calculate new values	E	Math, Science, Social Studies, Problem Solving, Critical Thinking	any appropriate spreadsheet program	
15.2.5.6	Print reports with a spreadsheet program a) Determine information to include b) Determine width of report c) Set and change margins and spacing d) Set and change printer options	E	Math, Science, Social Studies, Problem Solving, Critical Thinking	any appropriate spreadsheet program	
15.2.5.7	Save spreadsheet files	E	Math, Science, Social Studies, Problem Solving, Critical Thinking	any appropriate spreadsheet program	
15.2.6	UTILITY PROGRAMS				
15.2.6.1	Uses utility programs such as Crossword Magic and MECC Puzzles & Posters.	E	Language Arts, Math, Science, Social Studies	Tic Tac Show - Computer Advanced Ideas; Puzzles and Posters - MECC; Crossword Magic - L&S Software; Printshop - Broderbund; Newsroom - Springboard	

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COMPUTER EDUCATION: GRADE 6 OBJECTIVES

Upon completion of Grade 6:

COMPUTER EDUCATION: GRADE 6 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 6:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.3.1	USE COMPUTER IN INTERACTIVE MODE				
15.3.1.4	Use thinking skills programs such as Rocky's Boots and Snooper Troops.	E	Problem Solving, Critical Thinking	Robot Odyssey, Rocket's Boots - Learning Co.; In Search of the Most Amazing Thing, Snooper Troop; Puzzle Tanks; Factory; Incredible Lab - Sunburst; Mind Puzzles; Problem Solving Strategies - MECC	Discrimination: 2nd Step; Memory: 1st Step - Sunburst
15.3.2	NATURE AND PURPOSE OF COMPUTER LANGUAGES				
15.3.2.2	Describes purpose of computer programs.	R	Problem Solving, Critical Thinking	3 R's of Microcomputing - MECC	Hunter, Beverly. <u>My Students Use Computers</u> , Reston Pub., 1983 TIES Computer Literary Kit Step 3
15.3.2.3	Describes relationship between a program and its output.	R	Problem Solving, Critical Thinking	Three R's of Microcomputing - MECC; Pinball Construction Set - Electronic Arts	Hunter, Beverly. <u>My Students Use Computers</u> , Reston Pub., 1983 TIES Computer Literary Kit Step 3

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COMPUTER EDUCATION: GRADE 6 OBJECTIVES

Upon completion of Grade 6:

COMPUTER EDUCATION: GRADE 6 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 6:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.3.3	PROGRAMMING				
15.3.3.1	Is familiar with BASIC or Logo. a) Enter and run programs from the keyboard b) Use system commands for BASIC or Logo c) Interrupt and stop programs during execution d) Store and retrieve programs	0	Computers, Math, Science, Art, Problem Solving, Critical Thinking	LOGO - Apple; Mouse in Maze - MECC; Experiencing Procedures - MECC; Graphing - MECC; BASIC - TIES; Programming Special Projects - MECC	New Step-by-Step - Program Design; Logo in the Classroom - MECC; TIES Computer Literacy Kit - Step 3
15.3.3.3	Write programs in BASIC or Logo which include arithmetic operations. a) Use addition (+), subtraction (-), multiplication (x), division (/), and exponentiation (^) b) Use algebraic order of operations c) Use parentheses in computations d) Use numeric variables	0	Computers, Math, Science, Art, Problem Solving, Critical Thinking	LOGO - Apple; Mouse in Maze - MECC; Experiencing Procedures - MECC; Graphing - MECC; BASIC - TIES; Programming Special Projects - MECC	New Step-by-Step - Program Design; Logo in the Classroom - MECC; TIES Computer Literacy Step 3
15.3.3.4	Write programs in BASIC or Logo which include input/output commands and statements; format input and output.	0	Computers, Math, Science, Art, Problem Solving, Critical Thinking	LOGO - Apple; Mouse in Maze - MECC; Experiencing Procedures - MECC; Graphing - MECC; BASIC - TIES; Programming Special Projects - MECC	New Step-by-Step - Program Design; Logo in the Classroom - MECC; TIES Computer Literacy Kit - Step 3

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COMPUTER EDUCATION: GRADE 6 OBJECTIVES

Upon completion of Grade 6:

COMPUTER EDUCATION: GRADE 6 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 6:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.3.3.5	Write programs in BASIC or Logo which include conditional and unconditional statements. a) Use GOTO statements b) Use IF ... THEN statements c) Understand and use the relational operators = (is equal to), <> (is not equal to), < = (is less than or equal to), > = (is greater than or equal to), < (is less than), and > (is greater than).	0	Computers, Math, Science, Art, Problem Solving, Critical Thinking	LOGO - Apple; Mouse in Maze - MECC; Experiencing Procedures - MECC; BASIC - TIES; Programming Special Projects - MECC	New Step-by-Step - Program Design; Logo in the Classroom - MECC; TIES Computer Literacy Kit - Step 3
15.3.3.6	Write programs in BASIC or Logo which include loops. a) Use FOR ... NEXT or REPEAT statements.	0	Computers, Math, Science, Art, Problem Solving, Critical Thinking	LOGO - Apple; Mouse in Maze - MECC; Experiencing Procedure - MECC; Graphing - MECC; BASIC - TIES; Programming Special Projects - MECC	New Step-by-Step - Program Design; Logo in the Classroom - MECC; TIES computer Literacy Kit - Step 3
15.3.3.10	Write programs in BASIC or Logo which include character strings and the use of string variables. a) Use string variables b) Use string functions	0	Computers, Math, Science, Art, Problem Solving, Critical Thinking	LOGO - Apple; Mouse in Maze - MECC; Experiencing Procedures - MECC; Graphing - MECC; BASIC - TIES; Programming Special Projects - MECC	New Step-by-Step - Program Design; Logo in the Classroom - MECC; TIES Computer Literacy Kit - Step 3
15.3.3.11	Write programs in Logo which include the use of procedures.	0	Computers, Math, Science, Art, Problem Solving, Critical Thinking	LOGO - Apple; Mouse in Maze - MECC; Experiencing Procedures - MECC;	Logo in the Classroom - MECC

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COMPUTER EDUCATION: GRADE 6 OBJECTIVES

Upon completion of Grade 6:

COMPUTER EDUCATION: GRADE 6 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 6:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.3.3.14	Write programs in BASIC or Logo which include the use of graphics.	O	Computers, Math, Science, Art, Problem Solving, Critical Thinking	LOGO - Apple; Mouse in Maze - MECC; Experiencing Procedures - MECC; Graphing - MECC; BASIC - TIES; Programming Special Projects - MECC	New Step-by-Step Program Design; Logo in the Classroom - MECC; TIES Computer Literacy Kit - Step 3
15.4.1	HISTORIC DEVELOPMENT				
15.4.1.1	Describes early devices for manipulating numbers such as abacus and slide rule.	I	Math, Social Studies	Computer Literacy Introduction (PLATO) - Control Data Corp.	MECC Computer Parts Kits; TIES Computer Literacy Kit Step 3; Hunter, Beverly. <u>My Students Use Computers</u> , Reston Pub., 1983
15.4.1.2	Aware of computing machines (i.e., calculator, adding machine, cash register).	I	Math		
15.4.1.3	Identifies technological advances such as vacuum tubes, transistors, and integrated circuits which led to different generations of computers.	I	Science, Math	Computer Literacy Introduction (PLATO) - Control Data Corp.	TIES Computer Literacy Kit Step 3; Hunter, Beverly. <u>My Students Use Computers</u> , Reston Pub., 1983
15.4.2	SOCIETAL IMPACTS				
15.4.2.1	Identifies ways of using computers which do not neglect or violate the rights of others.	R	Language Arts, Math, Science, Social Studies	Piracy - ASD; Computer Literacy Introduction (PLATO) - Control Data Corp. Pub., 1983	TIES Computer Literacy Kit Step 3; Hunter, Beverly. <u>My Students Use Computers</u> , Reston Pub., 1983

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COMPUTER EDUCATION: GRADE 6 OBJECTIVES

Upon completion of Grade 6:

COMPUTER EDUCATION: GRADE 6 OBJECTIVES		CORRELATION OF OBJECTIVES			
Upon completion of Grade 6:		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.4.2.2	Describes advantages and disadvantages of using computers.	R	Language Arts, Math, Science, Social Studies	Computer Literacy Introduction (PLATO) - Control Data Corp.	TIES Computer Literacy Kit Step 3; Hunter, Beverly. <u>My Students Use Computers</u> , Reston Pub., 1983
15.4.2.3	Describes legal and ethical uses of computers.	R	Language Arts, Math, Science, Social Studies	Piracy - ASD; Computer Literacy Introduction (PLATO) - Control Data Corp.	TIES Computer Literacy Kit Step 3; Hunter, Beverly. <u>My Students Use Computers</u> , Reston Pub., 1983
15.4.3	SOCIETAL USES OF COMPUTERS				
15.4.3.1	Identifies or describes uses of computers in a variety of careers and vocations.	I	Language Arts, Math, Science, Social Studies	Computer Literacy Introduction (PLATO) - Control Data Corp.; Search Series - McGraw-Hill	TIES Computer Literacy Kit Step 3; Hunter, Beverly. <u>My Students Use Computers</u> , Reston Pub., 1983
15.4.3.2	Identifies or describes uses of computers in the home and in school.	I	Language Arts, Math, Science, Social Studies	Computer Literacy Introduction (PLATO) - Control Data Corp.	TIES Computer Literacy Kit Step 3; Hunter, Beverly. <u>My Students Use Computers</u> , Reston Pub., 1983
15.4.3.3	Identifies or describes uses of computers for recreation.	I	Language Arts, Math, Science, Social Studies	Computer Literacy Introduction (PLATO) - Control Data Corp.	TIES Computer Literacy Kit Step 3; Hunter, Beverly. <u>My Students Use Computers</u> , Reston Pub., 1983

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COMPUTER EDUCATION: GRADE 6 OBJECTIVES

Upon completion of Grade 6:

CORRELATION OF OBJECTIVES

		*	CURRICULUM AREA/UNIT	SUGGESTED SOFTWARE	OTHER RESOURCES
15.4.4	ATTITUDES				
15.4.4.2	Displays positive attitudes towards computers and computer applications.	R	Language Arts, Math, Science, Social Studies	Printshop - Broderbund	TIES Computer Literacy Kit Step 3; Hunter, Beverly. <u>My Students Use Computers</u> , Reston Pub., 1983
15.4.5	PROJECTED CHANGES				
15.4.5.1	Describes latest developments in uses of robots.	I	Science, Problem Solving, Critical Thinking	Robot War - Muse	Periodicals - Enter and Digit
15.4.5.2	Describes latest developments in artificial intelligence.	I	Science, Problem Solving, Critical Thinking	"Animal" on System Master or Sample Programs (Ile) - Apple	Periodicals - Enter and Digits
15.4.5.3	Describes latest developments in other computer related technology.	I	Science, Problem Solving, Critical Thinking	Robot Odessy - Learning Co.; Electronic Village - EXSYS; Mouse Paint - Apple	Periodicals - Enter and Digit

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NUMBERING OF GOALS AND OBJECTIVES

To facilitate identification of goals and objectives, each curriculum area has been assigned a number:

Science	2
Social Studies	3
Mathematics	4
Language Arts/Reading	5

Goal numbers are identified by a two-part code. Goal 2.3 refers to Science, third goal; 4.1 refers to Mathematics, first goal, etc.

Program objectives are identified by a three-part code number. Example:

5.2.3 refers to Language Arts/Reading, second goal, third program objective.

4.1.2 refers to Mathematics, first goal, second program objective.

Instructional objectives are identified by a four-part code number. Example:

3.1.5.2 refers to Social Studies, first goal, fifth program objective, second instructional objective.

INSTRUCTION SYMBOLS

Each objective has been assigned a letter which represents the type of instruction which is to take place.

<u>Symbol</u>	<u>Definition</u>
I	The skills, knowledge and/or values related to the objective are first introduced into the instructional program at this level.
E	The skills, knowledge and/or values related to the objective are expanded to provide students new insights and/or broader applications.
R	The skills, knowledge and/or values related to the objective are reviewed and reinforced at this level.

COMPUTER EDUCATION

PROGRAM STATEMENT

Computer skills are essential for every individual in today's technological society. Everyone needs to have the knowledge, skills, and attitudes that will enable them to effectively utilize computers. The Computer Instructional Program of the Anchorage School District will provide the opportunity for all students to learn to use computers and to develop positive attitudes, values, and motivation toward computers and their applications as appropriate for each individual's age, needs, and desires.

PROGRAM PHILOSOPHY

The Anchorage School District supports the belief that:

1. Computer skills should be integrated throughout the curriculum.
2. Computers should be used by students for both guided and independent practice.
3. Computers should be used by students to reinforce and extend the skills and concepts taught in the classroom.
4. Computers should be used by teachers to teach and/or demonstrate selected skills and concepts, to assist with record keeping and the generation of classroom materials, and to assist with diagnosis and evaluation of student learning.
5. Computers should be used to teach problem solving skills and other computer related skills such as word processing, data processing, information retrieval, business and personal finance, and programming.
6. The Computer Instructional Program needs to be viewed as a flexible program due to rapidly changing technology.

PROGRAM GOALS

- 15.1 The student is able to understand and use the vocabulary, definitions, and procedures associated with computers, their operation, and the operation of their peripherals as appropriate to needs and interests.
- 15.2 The student is able to associate computers with appropriate areas of application, effectively select and utilize application software, and apply this knowledge in solving problems.
- 15.3 The student is able to understand the nature and purpose of computer languages and programming, to develop and write computer programs as appropriate to needs and interest, and to apply this knowledge in solving problems.
- 15.4 The student is familiar with the development of computing devices; is aware of the impact of technology on society; is aware of career, vocational, home, and recreational uses of computers; displays positive attitudes towards computers; and understands the emerging roles of computers and their effective use in a changing society.

SCOPE
FOR
INTRODUCTION TO COMPUTERS

Anchorage School District
Division of Instruction
Curriculum Development Department

July 1985

ANCHORAGE SCHOOL DISTRICT
CATALOG OF COURSE DESCRIPTIONS

8536
Course Number

Grades 7-8

Introduction to Computers
Course Title

7-8
Grade Level

4-9 weeks
Length of Course

Prerequisites

None

Course Description

Introduction to Computers includes keyboarding skills, software utilization (word processing, filing systems, spreadsheets, etc.) and an introduction to programming techniques.

INTRODUCTION TO COMPUTERS

COURSE OUTLINE

1. Care, handling, and operation of computers
2. Applications overview
3. Keyboarding and Word Processing
 - A. Home position for fingers on the keyboard
 - B. Touch typing skills for all letters on the keyboard and the shift key
 - C. Input paragraphs, make necessary insertions and deletions to correct errors
 - D. Load and save word processing files
 - E. Use printer for hardcopy output
4. Spreadsheet
 - A. Set up a spread sheet using both labels and formulas
 - B. Enter data into a spreadsheet
 - C. Use printer for hardcopy output
5. Data Base
 - A. Format a data base
 - B. Enter data into a data base
 - C. Sort and search a data base
 - D. Print out tables style report
6. Programming languages overview
7. Introduction to BASIC programming
 - A. Enter, run, load, list, and save BASIC programs
 - B. Use PRINT, INPUT, and LET commands
 - C. Use arithmetic functions
 - D. Use string variables
 - E. Use loops

8. Introduction to Logo programming

- A. Enter, run, load, and save Logo programs
- B. Produce graphics on screen of various geometric figures
- C. Use CS, FD, BK, RT, LT, and REPEAT commands

COMPUTER EDUCATION OBJECTIVES: INTRODUCTION TO COMPUTERS

Type of
Instruction*

- | | | |
|----------|--|---|
| 15.1.1 | COMPUTER TERMINOLOGY. | |
| 15.1.1.1 | Understand and use hardware terms such as computer, monitor, disk drive, terminal, printer, and keyboard. | R |
| 15.1.1.2 | Understand and use terms for components and parts such as memory, input, output, and slot. | R |
| 15.1.1.3 | Understand and use operation terms such as cursor, boot, menu, and catalog. | E |
| 15.1.1.4 | Understand and use software terms such as disk, program, and documentation. | R |
| 15.1.1.5 | Understand and use firmware terms such as 80 column card and extended 80 column card. | R |
| 15.1.1.6 | Identify different types of computers (i.e., main frame, mini, micro, analog, digital). | I |
| 15.1.2 | FUNCTIONS OF MAJOR COMPONENTS OF COMPUTERS. | |
| 15.1.2.1 | Understand the purposes and functions of the computers memory, random access memory (RAM), read only memory (ROM), central processing unit (CPU), arithmetic logic unit (ALU). | R |
| 15.1.2.2 | Understand the functions of and be able to use input and output devices such as the keyboard, monitor, disk drive, printer, modem. | E |
| 15.1.2.3 | Understand the functions of and be able to use a floppy disk as a storage device. | E |
| 15.1.3 | CARE AND HANDLING OF COMPUTER HARDWARE. | |
| 15.1.3.1 | Handle and store disks in an appropriate fashion. | R |

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

		<u>Type of Instruction*</u>
15.1.3.2	Use the keyboard in an appropriate fashion.	R
15.1.3.3	Use the computer in an appropriate fashion.	R
15.1.3.4	Use peripheral devices in an appropriate fashion.	R
15.1.4	OPERATE A COMPUTER.	
15.1.4.1	Turn a system on and off, boot a disk.	R
15.1.4.2	Run programs from a menu, catalog, or directory.	E
15.1.4.3	Break out of a program; interrupt or stop a program during execution.	R
15.1.4.4	Use keyboarding skills.	E
15.1.4.5	Troubleshoot common hardware and software problems.	E
15.1.4.6	Identify compatible software, recognize need for hardware-software compatibility.	R
15.1.4.7	Locate and use appropriate information in operating manuals.	E
15.1.5	PERIPHERAL DEVICES.	
15.1.5.1	Use keyboard and modem as an input device.	R
15.1.5.2	Use the printer and modem as an output device.	R
15.1.5.3	Use robotic devices.	R
15.2.1	COMPUTER APPLICATIONS.	
15.2.1.1	Identify areas of computer applications such as information processing, storage and retrieval of information, simulation and modeling, process control, and decision making.	I
15.2.1.2	Identify characteristics of appropriate applications of computers such as need for speed, accuracy, repetitiveness, or volume of information.	I

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

		<u>Type of Instruction*</u>
15.2.1.3	Identify limiting considerations for use of computers such as cost, software availability, storage capacity, or computer capability.	I
15.2.2	LOCATING AND SELECTING PRE-EXISTING SOFTWARE.	
15.2.2.3	Identify appropriate software to use for a specific application or problem.	I
15.2.3	WORD PROCESSING.	
15.2.3.1	Identify characteristics and functions of word processing programs.	I
15.2.3.4	Use a word processing program to create and print a document.	E
15.2.3.5	Use a word processing program to edit a document. a) Move cursor and make corrections. b) Insert and delete lines and text segments	E
15.2.3.8	Save word processing files.	E
15.2.3.9	Use the documentation for a word processing program.	I
15.2.4	DATA BASE.	
15.2.4.1	Identify characteristics and functions of data base programs.	E
15.2.4.3	Identify examples of data base program applications.	E
15.2.4.4	Create a data base file.	E
15.2.4.5	Edit a data base file. a) Insert records into a file. b) Delete records from a file. c) Change records in a file.	E
15.2.4.6	Format and print reports with a data base program. a) Create and print a tables-style report.	E

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

		<u>Type of Instruction*</u>
15.2.4.7	Do searches and sorts with a data base program.	E
15.2.4.8	Save data base files.	E
15.2.4.9	Use the documentation for a data base program.	I
15.2.5	SPREADSHEET.	
15.2.5.1	Identify characteristics and functions of spreadsheet programs.	I
15.2.5.3	Identify examples of spreadsheet applications.	E
15.2.5.4	Plan and create a worksheet with a spreadsheet program. a) Move cursor to make entries b) Use labels as entries c) Use values as entries d) Use formulas as entries	E
15.2.5.5	Edit a worksheet with a spreadsheet program. b) Change entries	E
15.2.5.6	Print reports with a spreadsheet program.	E
15.2.5.7	Save spreadsheet files.	E
15.2.5.8	Use the documentation for a spreadsheet program.	I
15.3.2	NATURE AND PURPOSES OF COMPUTER LANGUAGES AND PROGRAMMING.	
15.3.2.1	Describe the purpose of computer languages.	E
15.3.2.2	Describe the purpose of computer programs.	I
15.3.2.3	Describe the relationship between a computer program and its output.	E

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

15.3.3 BASIC AND LOGO PROGRAMMING.

- | | | |
|-----------|--|---|
| 15.3.3.1 | Be familiar with BASIC and Logo programming languages.
a) Identify the requirements for a program written in BASIC and Logo
b) Enter and run BASIC and Logo programs from the keyboard
c) Understand and use system commands for BASIC and Logo
d) Interrupt and stop programs during execution
e) Store and retrieve programs
f) Understand and use syntax of BASIC and Logo
g) Understand and use semantics of BASIC and Logo | I |
| | | |
| 15.3.3.3 | Write programs in BASIC which include arithmetic operations.
a) Use addition (+), subtraction (-), multiplication (*), division (/), and exponentiation (^)
b) Understand and use algebraic order of operations
c) Use parentheses in computations
d) Understand and use numeric variables | I |
| | | |
| 15.3.3.4 | Write programs in BASIC which include input/output commands and statements; format input and output. | I |
| | | |
| 15.3.3.6 | Write programs in BASIC and Logo which include loops.
a) Understand and use FOR ... NEXT statements
b) Understand and use REPEAT command | I |
| | | |
| 15.3.3.10 | Write programs in BASIC which include use of string variables.
a) Understand and use string variables | I |
| | | |
| 15.3.3.14 | Write programs in BASIC and Logo which include the use of graphics. | I |

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

		Type of Instruction*
15.4.1	HISTORIC DEVELOPMENT OF COMPUTING DEVICES.	
15.4.1.3	Aware of significant technological advances leading to different generations of computers (i.e., vacuum tubes, transistors, integrated circuits, silicon chips).	E
15.4.2	IMPACTS AND LEGAL ASPECTS OF COMPUTER TECHNOLOGY.	
15.4.2.1	Identify ways of using computers which do not neglect or violate the rights of others.	R
15.4.2.2	Describe the advantages and disadvantages of using computers.	R
15.4.2.3	Describe the legal and ethical uses of computers.	R
15.4.3	COMPUTER APPLICATIONS IN VARIETY OF FIELDS.	
15.4.3.1	Describe career and vocational applications of computers.	E
15.4.3.2	Describe home and school applications of computers.	E
15.4.3.3	Describe recreational applications of computers.	E
15.4.4	ATTITUDES TOWARD COMPUTERS.	
15.4.4.2	Display positive attitudes towards computers and computer applications.	R
15.4.5	PROJECTED CHANGES.	
15.4.5.1	Describes the latest developments in uses of robots.	E
15.4.5.2	Describes latest developments in artificial intelligence.	R
15.4.5.3	Describes latests developments in other computer related technologies.	E

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

SCOPE
FOR
INTRODUCTION TO COMPUTER PROGRAMMING

Anchorage School District
Division of Instruction
Curriculum Development Department

July 1985

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NUMBERING OF GOALS AND OBJECTIVES

To facilitate identification of goals and objectives, each curriculum area has been assigned a number:

Science	2
Social Studies	3
Mathematics	4
Language Arts/Reading	5

Goal numbers are identified by a two-part code. Goal 2.3 refers to Science, third goal; 4.1 refers to Mathematics, first goal, etc.

Program objectives are identified by a three-part code number. Example:

5.2.3 refers to Language Arts/Reading, second goal, third program objective.

4.1.2 refers to Mathematics, first goal, second program objective.

Instructional objectives are identified by a four-part code number. Example:

3.1.5.2 refers to Social Studies, first goal, fifth program objective, second instructional objective.

INSTRUCTION SYMBOLS

Each objective has been assigned a letter which represents the type of instruction which is to take place.

<u>Symbol</u>	<u>Definition</u>
I	The skills, knowledge and/or values related to the objective are first introduced into the instructional program at this level.
E	The skills, knowledge and/or values related to the objective are expanded to provide students new insights and/or broader applications.
R	The skills, knowledge and/or values related to the objective are reviewed and reinforced at this level.

COMPUTER EDUCATION

PROGRAM STATEMENT

Computer skills are essential for every individual in today's technological society. Everyone needs to have the knowledge, skills, and attitudes that will enable them to effectively utilize computers. The Computer Instructional Program of the Anchorage School District will provide the opportunity for all students to learn to use computers and to develop positive attitudes, values, and motivation toward computers and their applications as appropriate for each individual's age, needs, and desires.

PROGRAM PHILOSOPHY

The Anchorage School District supports the belief that:

1. Computer skills should be integrated throughout the curriculum.
2. Computers should be used by students for both guided and independent practice.
3. Computers should be used by students to reinforce and extend the skills and concepts taught in the classroom.
4. Computers should be used by teachers to teach and/or demonstrate selected skills and concepts, to assist with record keeping and the generation of classroom materials, and to assist with diagnosis and evaluation of student learning.
5. Computers should be used to teach problem solving skills and other computer related skills such as word processing, data processing, information retrieval, business and personal finance, and programming.
6. The Computer Instructional Program needs to be viewed as a flexible program due to rapidly changing technology.

PROGRAM GOALS

- 15.1 The student is able to understand and use the vocabulary, definitions, and procedures associated with computers, their operation, and the operation of their peripherals as appropriate to needs and interests.
- 15.2 The student is able to associate computers with appropriate areas of application, effectively select and utilize application software, and apply this knowledge in solving problems.
- 15.3 The student is able to understand the nature and purpose of computer languages and programming, to develop and write computer programs as appropriate to needs and interest, and to apply this knowledge in solving problems.
- 15.4 The student is familiar with the development of computing devices; is aware of the impact of technology on society; is aware of career, vocational, home, and recreational uses of computers; displays positive attitudes towards computers; and understands the emerging roles of computers and their effective use in a changing society.

ANCHORAGE SCHOOL DISTRICT
CATALOG OF COURSE DESCRIPTIONS

8537
Course Number

Grades 7-8

Introduction to
Computer Programming
Course Title

7-8
Grade Level

9-18 weeks
Length of Course

Prerequisites

None

Course Description

Introduction to Computer Programming reviews and expands keyboarding and computer skills with an emphasis on programming in one or more languages.

INTRODUCTION TO COMPUTER PROGRAMMING
COURSE OUTLINE

1. Care, handling, and operation of computers
2. Applications overview
3. Keyboarding and Word Processing Skills
4. Programming languages overview
6. BASIC Programming
 - A. System commands (i.e., RUN, LIST, LOAD, SAVE)
 - B. PRINT statements and screen formatting (TAB, HTAB, VTAB)
 - C. INPUT statements
 - D. LET statements
 - E. String and numeric variables
 - F. Arithmetic functions
 - G. FOR ... NEXT statements
 - H. IF ... THEN statements
 - I. Subroutines
 - J. String manipulation
7. LOGO Programming
 - A. CS, FD, BK, RT, LT, and REPEAT commands
 - B. ST, HT, PU, and PD commands
 - C. Procedures
 - D. Superprocedures
 - E. Simple recursion
 - F. Numeric variables
 - G. Conditional statements
 - H. PRINT command

- I. Random function
- J. Arithmetic operations
- K. FIRST, LAST, BUTFIRST, and BUTLAST commands
- L. String variables
- M. READLIST commands

COMPUTER EDUCATION OBJECTIVES: INTRODUCTION

15.1.1 COMPUTER TERMINOLOGY.

- 15.1.1.1 Understand and use hardware as computer, monitor, disk, printer, and keyboard.
- 15.1.1.2 Understand and use terms and parts such as memory, and slot.
- 15.1.1.3 Understand and use operations as cursor, boot, menu, and
- 15.1.1.4 Understand and use software as disk, program, and document.
- 15.1.1.6 Identify different types of computers (i.e., main frame, mini, and digital).

15.1.2 FUNCTIONS OF MAJOR COMPONENTS OF COMPUTER

- 15.1.2.1 Understand the purposes and functions of the computer's memory, memory (RAM), read only memory, central processing unit (CPU), arithmetic logic unit (ALU).
- 15.1.2.2 Understand the functions of the computer to use input and output devices: the keyboard, monitor, disk, printer, modem.
- 15.1.2.3 Understand the functions of the computer to use a floppy disk as a storage device.

15.1.3 CARE AND HANDLING OF COMPUTER HARDWARE

- 15.1.3.1 Handle and store disks in proper fashion.

* Instruction Code: I = Introduce; E = Expand

INSTRUCTION TO COMPUTER PROGRAMMING

	<u>Type of Instruction*</u>
hardware terms such as monitor, disk drive, terminal, keyboard.	R
terms for components such as memory, input, output, keyboard.	R
operation terms such as menu, and catalog.	R
software terms such as program and documentation.	R
types of computers such as mini, micro, analog, digital.	R
OF COMPUTERS.	
uses and functions of memory, random access memory (RAM), read only memory (ROM), central processing unit (CPU), arithmetic logic unit (ALU).	R
functions of and be able to use output devices such as printer, disk drive, keyboard.	R
functions of and be able to use disk as a storage device.	R
HARDWARE.	
disks in an appropriate manner.	R

* E = Expand; R = Reinforce

		Type of Instruction*
15.1.3.2	Use the keyboard in an appropriate fashion.	R
15.1.3.3	Use the computer in an appropriate fashion.	R
15.1.3.4	Use peripheral devices in an appropriate fashion.	R
15.1.4	OPERATE A COMPUTER.	
15.1.4.1	Turn a system on and off, boot a disk.	R
15.1.4.2	Run programs from a menu, catalog, or directory.	E
15.1.4.3	Break out of a program; interrupt or stop a program during execution.	E
15.1.4.4	Use keyboarding skills.	E
15.1.4.5	Troubleshoot common hardware and software problems.	E
15.1.4.6	Identify compatible software, recognize need for hardware-software compatibility.	R
15.1.4.7	Locate and use appropriate information in operating manuals.	E
15.1.5	PERIPHERAL DEVICES.	
15.1.5.1	Use keyboard and modem as input devices.	E
15.1.5.2	Use the printer and modem as an output devices.	E
15.1.5.3	Use robotic devices.	E
15.2.1	AREAS OF COMPUTER APPLICATIONS.	
15.2.1.1	Identify areas of computer applications such as information processing, storage and retrieval of information, simulation and modeling, process control, and decision making.	E
15.2.1.2	Identify characteristics of appropriate applications of computers such as need for speed, accuracy, repetitiveness, or volume of information.	E

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

		Type of Instruction*
15.2.1.3	Identify limiting considerations for use of computers such as cost, software availability, storage capacity, or computer capability.	E
15.2.2	LOCATING AND SELECTING PRE-EXISTING SOFTWARE.	
15.2.2.3	Identify appropriate software to use for a specific application or problem.	E
15.2.3	WORD PROCESSING.	
15.2.3.1	Identify characteristics and functions of word processing programs.	E
15.2.3.4	Use a word processing program to create and print a document.	E
15.2.3.5	Use a word processing program to edit a document. a) Move cursor and make corrections b) Insert and delete lines and text segments	E
15.2.3.8	Save word processing files.	E
15.2.3.9	Use the documentation for a word processing program.	E
15.2.4	DATA BASE.	
15.2.4.1	Identify characteristics and functions of data base programs.	R
15.2.4.4	Create a data base file.	R
15.2.4.5	Edit a data base file. a) Insert records into a file b) Delete records from a file c) Change records in a file	R
15.2.4.6	Format and print reports with a data base program. a) Create and print a tables-style report	R

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

		Type of Instruction*
15.2.4.8	Save data base files.	R
15.2.4.9	Use the documentation for a data base program.	R
15.2.5	SPREADSHEET.	
15.2.5.1	Identify characteristics and functions of spreadsheet programs.	R
15.2.5.4	Plan and create a worksheet with a spreadsheet program. a) Move cursor to make entries b) Use labels as entries c) Use values as entries d) Use formulas as entries	R
15.2.5.5	Edit a worksheet with a spreadsheet program. b) Change entries	R
15.2.5.6	Print reports with a spreadsheet program.	R
15.2.5.7	Save spreadsheet files.	R
15.2.5.8	Use the documentation for a spreadsheet program.	R
15.3.2	NATURE AND PURPOSES OF COMPUTER LANGUAGES AND PROGRAMMING.	
15.3.2.1	Describe the purpose of computer languages.	E
15.3.2.2	Describe the purpose of computer programs.	E
15.3.2.3	Describe the relationship between a computer program and its output.	E

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

15.3.3 BASIC AND LOGO PROGRAMMING.

- | | | |
|----------|---|---|
| 15.3.3.1 | Be familiar with BASIC and Logo programming languages. | E |
| | a) Identify the requirements for a program written in BASIC and Logo | |
| | b) Enter and run BASIC and Logo programs from the keyboard | |
| | c) Understand and use system commands for BASIC and Logo | |
| | d) Interrupt and stop programs during execution | |
| | e) Store and retrieve programs | |
| | f) Understand and use syntax of BASIC and Logo | |
| | g) Understand and use semantics of BASIC and Logo | |
| 15.3.3.2 | Use programming procedures. | I |
| | a) Plan the program (define the problem; describe the purpose, desired output, and necessary input for the program) | |
| | b) Design the program (develop the algorithm, describe the steps needed to get from input to output) | |
| | c) Code the program (write the program) | |
| | d) Document the program (REM statements) | |
| | e) Debug the program (find and correct coding, logic, and typing errors) | |
| 15.3.3.3 | Write programs which include arithmetic operations. | E |
| | a) Use addition (+), subtraction (-), multiplication (*), division (/), and exponentiation (^) | |
| | b) Understand and use algebraic order of operations | |
| | c) Use parentheses in computations | |
| | d) Understand and use numeric variables | |
| 15.3.3.4 | Write programs which include input/output commands and statements; format input and output. | E |

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

Type of
Instruction*

- | | | |
|--|---|---|
| 15.3.3.5 | Write programs which include conditional and unconditional statements.
c) Understand and use IF ... THEN statements
e) Understand and use the relational operators = (is equal to), < > (is not equal to), < = (is less than or equal to), > = (is greater than or equal to), < (is less than), and > (is greater than)
f) Understand and use the special operators AND, OR, and NOT | I |
| 15.3.3.6 | Write programs which include loops.
a) Understand and use FOR ... NEXT statements
b) Understand and use REPEAT command | E |
| 15.3.3.7 | Write programs which utilize the built-in functions of the computer or programming language. | I |
| 15.3.3.10 | Write programs which include use of string variables.
a) Understand and use string variables
c) Understand and use string functions | E |
| 15.3.3.11 | Write programs which include the use of subroutines and procedures. | E |
| 15.3.3.13 | Write programs which include the use of recursion. | I |
| 15.3.3.14 | Write programs which include the use of graphics. | E |
| 15.4.1 HISTORIC DEVELOPMENT OF COMPUTING DEVICES. | | |
| 15.4.1.3 | Aware of significant technological advances leading to different generations of computers (i.e., vacuum tubes, transistors, integrated circuits, silicon chips). | R |
| 15.4.2 IMPACTS AND LEGAL ASPECTS OF COMPUTER TECHNOLOGY. | | |
| 15.4.2.1 | Identify ways of using computers which do not neglect or violate the rights of others. | R |

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

		<u>Type of Instruction*</u>
15.4.2.2	Describe the advantages and disadvantages of using computers.	R
15.4.2.3	Describe the legal and ethical uses of computers.	R
15.4.3	COMPUTER APPLICATIONS IN VARIETY OF FIELDS.	
15.4.3.1	Describe career and vocational applications of computers.	E
15.4.3.2	Describe home and school applications of computers.	E
15.4.3.3	Describe recreational applications of computers.	E
15.4.4	ATTITUDES	
15.4.4.2	Display positive attitudes towards computers and computer applications.	R
15.4.5	PROJECTED CHANGES.	
15.4.5.1	Describes the latest developments in uses of robots.	R
15.4.5.2	Describes latest developments in artificial intelligence.	R
15.4.5.3	Describes latests developments in other computer related technologies.	R

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

SCOPE
FOR
COMPUTER FUNDAMENTALS

Anchorage School District
Division of Instruction
Curriculum Development Department

July 1985

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Course Outline	3
Course Objectives	5

NUMBERING OF GOALS AND OBJECTIVES

To facilitate identification of goals and objectives, each curriculum area has been assigned a number:

Science	2
Social Studies	3
Mathematics	4
Language Arts/Reading	5

Goal numbers are identified by a two-part code. Goal 2.3 refers to Science, third goal; 4.1 refers to Mathematics, first goal, etc.

Program objectives are identified by a three-part code number. Example:

5.2.3 refers to Language Arts/Reading, second goal, third program objective.

4.1.2 refers to Mathematics, first goal, second program objective.

Instructional objectives are identified by a four-part code number. Example:

3.1.5.2 refers to Social Studies, first goal, fifth program objective, second instructional objective.

INSTRUCTION SYMBOLS

Each objective has been assigned a letter which represents the type of instruction which is to take place:

<u>Symbol</u>	<u>Definition</u>
I	The skills, knowledge and/or values related to the objective are first introduced into the instructional program at this level.
E	The skills, knowledge and/or values related to the objective are expanded to provide students new insights and/or broader applications.
R	The skills, knowledge and/or values related to the objective are reviewed and reinforced at this level.

COMPUTER EDUCATION

PROGRAM STATEMENT

Computer skills are essential for every individual in today's technological society. Everyone needs to have the knowledge, skills, and attitudes that will enable them to effectively utilize computers. The Computer Instructional Program of the Anchorage School District will provide the opportunity for all students to learn to use computers and to develop positive attitudes, values, and motivation toward computers and their applications as appropriate for each individual's age, needs, and desires.

PROGRAM PHILOSOPHY

The Anchorage School District supports the belief that:

1. Computer skills should be integrated throughout the curriculum.
2. Computers should be used by students for both guided and independent practice.
3. Computers should be used by students to reinforce and extend the skills and concepts taught in the classroom.
4. Computers should be used by teachers to teach and/or demonstrate selected skills and concepts, to assist with record keeping and the generation of classroom materials, and to assist with diagnosis and evaluation of student learning.
5. Computers should be used to teach problem solving skills and other computer related skills such as word processing, data processing, information retrieval, business and personal finance, and programming.
6. The Computer Instructional Program needs to be viewed as a flexible program due to rapidly changing technology.

PROGRAM GOALS

- 15.1 The student is able to understand and use the vocabulary, definitions, and procedures associated with computers, their operation, and the operation of their peripherals as appropriate to needs and interests.
- 15.2 The student is able to associate computers with appropriate areas of application, effectively select and utilize application software, and apply this knowledge in solving problems.
- 15.3 The student is able to understand the nature and purpose of computer languages and programming, to develop and write computer programs as appropriate to needs and interest, and to apply this knowledge in solving problems.
- 15.4 The student is familiar with the development of computing devices; is aware of the impact of technology on society; is aware of career, vocational, home, and recreational uses of computers; displays positive attitudes towards computers; and understands the emerging roles of computers and their effective use in a changing society.

ANCHORAGE SCHOOL DISTRICT
CATALOG OF COURSE DESCRIPTIONS

8518
Course Number

Grades 9-12

Computer Fundamentals
Course Title

9-12
Grade Level

1 semester
Length of Course

Prerequisites

None

Course Description

Computer Fundamentals includes an overview of computer fundamentals, use of peripherals, and an introduction to computer applications. This course is for the "new to computer" student.

COMPUTER FUNDAMENTALS

COURSE OUTLINE

1. Social Impact
 - A. History
 - B. Ethics
 - 1) Advantages and disadvantages
 - 2) Rights and responsibilities
 - C. Use
 - 1) Careers
 - 2) Home and school
 - 3) Recreation
2. Computer Function
 - A. Computer operation and peripherals
 - 1) Computer terminology
 - a) Hardware
 - b) Operation
 - c) Firmware
 - d) Components and parts
 - 2) Types of computers
 - B. Function of components
 - C. Proper care and handling of hardware and software
 - 1) Disks
 - 2) Keyboard
 - 3) Computer
 - 4) Peripherals

- D. Operation
 - 1) Turn system on and off
 - 2) Boot a disk
 - 3) Run programs from menu and catalog
 - 4) Break out of a program
 - 5) Use keyboarding skills
 - 6) Troubleshoot common problems
 - 7) Identify compatible software
 - 8) Locate appropriate information in operating manuals
- 3. Applications
 - A. Areas of computer applications
 - B. Software
 - 1) Identify characteristics of good software
 - 2) Identify software sources
 - 3) Identify software to solve problems
 - C. Introduction to word processing programs
 - D. Introduction to data base programs
 - E. Introduction to spreadsheet programs
- 4. Computer Languages and Programming
 - A. Compare languages
 - B. Write simple programs
 - 1) Draw simple graphics
 - 2) Print words and sentences on screen
 - 3) Perform arithmetic operations

COMPUTER EDUCATION OBJECTIVES: COMPUTER FUNDAMENTALS

		Type of Instruction*
15.1.1	COMPUTER TERMINOLOGY.	
15.1.1.1	Understand and use hardware terms such as computer, monitor, disk drive, terminal, printer, and keyboard.	R
15.1.1.2	Understand and use terms for components and parts such as memory, input, output, and slot.	R
15.1.1.3	Understand and use operation terms such as cursor, boot, and menu.	R
15.1.1.4	Understand and use software terms such as disk, program, and documentation.	R
15.1.1.5	Understand and use firmware terms such as 80 column card and extended 80 column card.	R
15.1.1.6	Identify different types of computers (i.e., main frame, mini, micro, analog, digital).	R
15.1.2	FUNCTIONS OF MAJOR COMPONENTS OF COMPUTERS.	
15.1.2.1	Understand the purposes and functions of the computers memory, random access memory (RAM), read only memory (ROM), central processing unit (CPU), arithmetic logic unit (ALU).	R
15.1.2.2	Understand the functions of and be able to use input and output devices such as the keyboard, monitor, disk drive, printer, modem.	R
15.1.2.3	Understand the functions of and be able to use a floppy disk as a storage device.	R
15.1.3	CARE AND HANDLING OF COMPUTER HARDWARE AND SOFTWARE.	
15.1.3.1	Handle and store disks in an appropriate fashion.	R

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

		Type of Instruction*
15.1.3.2	Use the keyboard in an appropriate fashion.	R
15.1.3.3	Use the computer in an appropriate fashion.	R
15.1.3.4	Use peripheral devices in an appropriate fashion.	R
15.1.4	OPERATE A COMPUTER.	
15.1.4.1	Turn a system on and off, boot a disk.	R
15.1.4.2	Run programs from a menu, catalog, or directory.	R
15.1.4.3	Break out of a program; interrupt or stop a program during execution.	R
15.1.4.4	Use keyboarding skills.	R
15.1.4.5	Troubleshoot common hardware and software problems.	R
15.1.4.6	Identify compatible software, recognize need for hardware-software compatibility.	R
15.1.4.7	Locate and use appropriate information in operating manuals.	R
15.1.5	PERIPHERAL DEVICES.	
15.1.5.1	Use a variety of input devices (i.e., modem, keyboard).	R
15.1.5.2	Use a variety of output devices (i.e., printer, modem).	R
15.1.5.3	Use robotic devices.	R
15.2.1	AREAS OF COMPUTER APPLICATIONS.	
15.2.1.1	Identify areas of computer applications such as information processing, storage and retrieval of information, simulation and modeling, process control, and decision making.	R
15.2.1.2	Identify characteristics of appropriate applications of computers such as need for speed, accuracy, repetitiveness, or volume of information.	R

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

		Type of Instruction*
15.2.1.3	Identify limiting considerations for use of computers such as cost, software availability, storage capacity, or computer capability.	R
15.2.2	LOCATING AND SELECTING PRE-EXISTING SOFTWARE.	
15.2.2.1	Identify characteristics of good software.	I
15.2.2.2	Identify software sources.	I
15.2.2.3	Identify appropriate software to use for a specific application or problem.	R
15.2.3	WORD PROCESSING.	
15.2.3.3	Identify examples of word processing applications.	I
15.2.3.4	Use a word processing program to create and print a document.	R
15.2.4	DATA BASE.	
15.2.4.3	Identify examples of data base program applications.	R
15.2.4.4	Create a data base file.	R
15.2.4.6	Format and print reports with a data base program. a) Create and print a tables-style report.	R
15.2.4.7	Do searches and sorts with a data base program.	R
15.2.5	SPREADSHEET.	
15.2.5.3	Identify examples of spreadsheet applications.	R
15.2.5.4	Plan and create a worksheet with a spreadsheet program. a) Move cursor to make entries b) Use labels as entries c) Use values as entries d) Use formulas as entries	R

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

- | | | |
|---|--|---|
| 15.2.5.6 | Print reports with a spreadsheet program.
a) Determine information to include | R |
| 15.2.6 UTILITY PROGRAMS. | | |
| 15.2.6.1 | Use puzzle, poster, or sign generator programs (i.e., Print Shop, The Newsroom, Crossword Magic, MECC Puzzles and Posters). | R |
| 15.3.2 NATURE AND PURPOSES OF COMPUTER LANGUAGES AND PROGRAMMING. | | |
| 15.3.2.1 | Describe the purpose of computer languages. | R |
| 15.3.2.2 | Describe the purpose of computer programs. | R |
| 15.3.2.3 | Describe the relationship between a computer program and its output. | R |
| 15.3.3 PROGRAMMING (BASIC OR LOGO). | | |
| 15.3.3.1 | Be familiar with a programming language.
a) Identify the requirements for a program in the language
b) Enter and run programs from the keyboard
c) Use system commands for the language
d) Interrupt and stop programs during execution
e) Store and retrieve programs
f) Use the syntax of the language
g) Use the semantics of the language | I |
| 15.3.3.3 | Write programs which include arithmetic operations.
a) Use addition (+), subtraction (-), multiplication (*), division (/), and exponentiation (^)
b) Understand and use algebraic order of operations
c) Use parentheses in computations
d) Understand and use numeric variables | I |

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

		Type of Instruction*
15.3.3.4	Write programs which include input/output commands and statements; format input and output.	I
15.3.3.5	Write programs which include conditional and unconditional statements. b) Use GOTO statements c) Understand and use IF ... THEN statements e) Understand and use the relational operators = (is equal to), <> (is not equal to), ≤ (is less than or equal to), ≥ (is greater than or equal to), < (is less than), and > (is greater than)	I
15.3.3.6	Write programs which include loops. a) Understand and use FOR ... NEXT statements b) Understand and use REPEAT command	I
15.3.3.7	Write programs which utilize the built-in functions of the computer or programming language.	I
15.3.3.10	Write programs which include string variables. a) Understand and use string variables c) Understand and use string functions	I
15.3.3.11	Write programs which include the use of subroutines and procedures.	I
15.3.3.14	Write programs which include the use of graphics.	I
15.4.1	HISTORIC DEVELOPMENT OF COMPUTING DEVICES.	
15.4.1.1	Aware of devices for manipulating numbers (i.e., abacus, slide rule).	R
15.4.1.2	Aware of computing machines (i.e., calculator, adding machine, cash register).	R

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

		Type of Instruction*
15.4.1.3	Aware of significant technological advances leading to different generations of computers (i.e., vacuum tubes, transistors, integrated circuits, silicon chips).	R
15.4.2	IMPACTS AND LEGAL ASPECTS OF COMPUTER TECHNOLOGY.	
15.4.2.1	Identify ways of using computers which do not neglect or violate the rights of others.	R
15.4.2.2	Describe the advantages and disadvantages of using computers.	R
15.4.2.3	Describe the legal and ethical uses of computers.	R
15.4.3	COMPUTER APPLICATIONS IN VARIETY OF FIELDS.	
15.4.3.1	Describe career and vocational applications of computers.	R
15.4.3.2	Describe home and school applications of computers.	R
15.4.3.3	Describe recreational applications of computers.	R
15.4.4	ATTITUDES TOWARD COMPUTERS AND COMPUTER APPLICATIONS.	
15.4.4.1	Identify feelings about using the computer and reasons for those feelings.	R
15.4.4.2	Display positive attitudes toward computers and computer applications.	R
15.4.5	PROJECTED CHANGES.	
15.4.5.1	Describes the latest developments in uses of robots.	R
15.4.5.2	Describes latest developments in artificial intelligence.	R
15.4.5.3	Describes latests developments in other computer related technologies.	R

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

SCOPE
FOR
INFORMATION PROCESSING

Anchorage School District
Division of Instruction
Curriculum Development Department

July 1985

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NUMBERING OF GOALS AND OBJECTIVES

To facilitate identification of goals and objectives, each curriculum area has been assigned a number:

Science	2
Social Studies	3
Mathematics	4
Language Arts/Reading	5

Goal numbers are identified by a two-part code. Goal 2.3 refers to Science, third goal; 4.1 refers to Mathematics, first goal, etc.

Program objectives are identified by a three-part code number. Example:

5.2.3 refers to Language Arts/Reading, second goal, third program objective.

4.1.2 refers to Mathematics, first goal, second program objective.

Instructional objectives are identified by a four-part code number. Example:

3.1.5.2 refers to Social Studies, first goal, fifth program objective, second instructional objective.

INSTRUCTION SYMBOLS

Each objective has been assigned a letter which represents the type of instruction which is to take place.

Symbol

Definition

I	The skills, knowledge and/or values related to the objective are first introduced into the instructional program at this level.
E	The skills, knowledge and/or values related to the objective are expanded to provide students new insights and/or broader applications.
R	The skills, knowledge and/or values related to the objective are reviewed and reinforced at this level.

COMPUTER EDUCATION

PROGRAM STATEMENT

Computer skills are essential for every individual in today's technological society. Everyone needs to have the knowledge, skills, and attitudes that will enable them to effectively utilize computers. The Computer Instructional Program of the Anchorage School District will provide the opportunity for all students to learn to use computers and to develop positive attitudes, values, and motivation toward computers and their applications as appropriate for each individual's age, needs, and desires.

PROGRAM PHILOSOPHY

The Anchorage School District supports the belief that:

1. Computer skills should be integrated throughout the curriculum.
2. Computers should be used by students for both guided and independent practice.
3. Computers should be used by students to reinforce and extend the skills and concepts taught in the classroom.
4. Computers should be used by teachers to teach and/or demonstrate selected skills and concepts, to assist with record keeping and the generation of classroom materials, and to assist with diagnosis and evaluation of student learning.
5. Computers should be used to teach problem solving skills and other computer related skills such as word processing, data processing, information retrieval, business and personal finance, and programming.
6. The Computer Instructional Program needs to be viewed as a flexible program due to rapidly changing technology.

PROGRAM GOALS

- 15.1 The student is able to understand and use the vocabulary, definitions, and procedures associated with computers, their operation, and the operation of their peripherals as appropriate to needs and interests.
- 15.2 The student is able to associate computers with appropriate areas of application, effectively select and utilize application software, and apply this knowledge in solving problems.
- 15.3 The student is able to understand the nature and purpose of computer languages and programming, to develop and write computer programs as appropriate to needs and interest, and to apply this knowledge in solving problems.
- 15.4 The student is familiar with the development of computing devices; is aware of the impact of technology on society; is aware of career, vocational, home, and recreational uses of computers; displays positive attitudes towards computers; and understands the emerging roles of computers and their effective use in a changing society.

ANCHORAGE SCHOOL DISTRICT
CATALOG OF COURSE DESCRIPTIONS

8519
Course Number

Grades 9-12

Information Processing
Course Title

9-12
Grade Level

1 Semester
Length of Course

Prerequisites

Computer Fundamentals or its equivalent or consent of instructor.

Course Description

Information Processing includes word processing, data processing, spreadsheets, methods of storage and retrieval, and other computer applications.

INFORMATION PROCESSING
COURSE OUTLINE

1. Keyboarding
 - A. Review
 - B. Enhancement
2. Computer Operations
 - A. Hardware
 - B. Operating systems
 - C. Disk handling
3. Word Processing
 - A. Entering text, typing text, printing text
 - B. Moving cursor and performing simple editing
 - C. Inserting and deleting lines and text segments
 - D. Changing margins, line spacing, and tabs
 - E. Moving, deleting, reading, and writing blocks of text
 - F. Performing searches and replacements
 - G. Changing page formatting
 - H. Embedding printing commands
 - I. Deleting, copying, and renaming files
4. Data Base Management Programs
 - A. Getting acquainted with the program
 - B. Searching for data in a file
 - C. Adding data to a file
 - D. Sorting and printing
 - E. Designing a file
 - F. Managing files and disks

5. Electronic Spreadsheets
 - A. Orientation to spreadsheets
 - B. Building of spreadsheet: primary command and functions
 - C. Replication/copying
 - D. Modifying and displaying the worksheet
 - E. Printing
6. Evaluating Software
 - A. Good software characteristics
 - B. Identifying software sources

COMPUTER EDUCATION OBJECTIVES: INFORMATION PROCESSING

Type of
Instruction*

15.1.1 COMPUTER TERMINOLOGY.

- | | | |
|----------|---|---|
| 15.1.1.1 | Understand and use hardware terms such as computer, monitor, disk drive, terminal, printer, and keyboard. | R |
| 15.1.1.2 | Understand and use terms for components and parts such as memory, input, output, and slot. | R |
| 15.1.1.3 | Understand and use operation terms such as cursor, boot, and menu. | R |
| 15.1.1.4 | Understand and use software terms such as disk, program, and documentation. | R |
| 15.1.1.5 | Understand and use firmware terms such as 80 column card and extended 80 column card. | E |

15.1.2 FUNCTIONS OF MAJOR COMPONENTS.

- | | | |
|----------|---|---|
| 15.1.2.2 | Understand the purposes and functions of the computers memory. | E |
| 15.1.2.3 | Understand the functions of and be able to use a floppy disk as a storage device. | E |

15.1.3 CARE AND HANDLING OF COMPUTER HARDWARE AND SOFTWARE.

- | | | |
|----------|---|---|
| 15.1.3.1 | Handle and store disks in an appropriate fashion. | R |
| 15.1.3.2 | Use the keyboard in an appropriate fashion. | R |
| 15.1.3.3 | Use the computer in an appropriate fashion. | R |
| 15.1.3.4 | Use peripheral devices in an appropriate fashion. | R |

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

- | | | |
|----------|--|---|
| 15.1.4 | OPERATE A COMPUTER. | |
| 15.1.4.1 | Turn a system on and off, boot a disk. | R |
| 15.1.4.2 | Run programs from a menu. | R |
| 15.1.4.3 | Break out of a program. | E |
| 15.1.4.4 | Use keyboarding skills. | E |
| 15.1.4.5 | Troubleshoot common hardware and software problems. | E |
| 15.1.4.6 | Identify compatible software, recognize need for hardware-software compatibility. | R |
| 15.1.4.7 | Locate and use appropriate information in operating manuals. | E |
| 15.1.5 | PERIPHERAL DEVICES. | |
| 15.1.5.1 | Use a variety of input devices (i.e., modem, keyboard). | E |
| 15.1.5.2 | Use a variety of output devices (i.e., modem, printer). | E |
| 15.2.1 | AREAS OF COMPUTER APPLICATIONS. | |
| 15.2.1.1 | Identify areas of computer applications such as information processing, storage and retrieval of information, simulation and modeling, process control, and decision making. | E |
| 15.2.1.2 | Identify characteristics of appropriate applications of computers such as need for speed, accuracy, repetitiveness, or volume of information. | E |
| 15.2.1.3 | Identify limiting considerations for use of computers such as cost, software availability, storage capacity, or computer capability. | E |

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

Type of
Instruction*

- | | | |
|----------|--|---|
| 15.2.2 | LOCATING AND SELECTING PRE-EXISTING SOFTWARE. | |
| 15.2.2.1 | Identify characteristics of good software. | E |
| 15.2.2.2 | Identify software sources. | E |
| 15.2.2.3 | Identify appropriate software to use for a specific application or problem. | E |
| 15.2.3 | WORD PROCESSING PROGRAM. | |
| 15.2.3.1 | Identify characteristics and functions of word processing programs. | E |
| 15.2.3.2 | Identify (determines) computer capabilities and peripherals necessary to use a specific word processing program. | I |
| 15.2.3.3 | Identify examples of word processing applications. | E |
| 15.2.3.4 | Use a word processing program to create and print a document. | E |
| 15.2.3.5 | Use a word processing program to edit a document.
a) Move cursor and make corrections
b) Insert and delete lines and text segments
c) Move, copy, and delete blocks of text | E |
| 15.2.3.6 | Use a word processing program to format a document.
a) Set and change margins, line spacing, and tabs
b) Set and change page formatting (layout)
c) Set and change printer options
d) Set and change paging and page numbers | E |
| 15.2.3.7 | Use a word processing program to perform searches and to make replacements. | E |
| 15.2.3.8 | Save, delete, copy, and rename word processing files. | E |
| 15.2.3.9 | Use the documentation for a word processing program. | E |

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

15.2.4 DATA BASE.

- | | | |
|----------|---|---|
| 15.2.4.1 | Identify characteristics and functions of data base programs. | E |
| 15.2.4.2 | Identify (determine) computer capabilities and peripherals necessary to use a specific data base program | I |
| 15.2.4.3 | Identify examples of data base program applications. | E |
| 15.2.4.4 | Create a data base file. | E |
| 15.2.4.5 | Edit a data base file.
a) Insert records into a file
b) Delete records from a file
c) Change records in a file
d) Change a file structure | E |
| 15.2.4.6 | Format and print reports with a data base program.
a) Create and print a tables-style report
b) Create and print a labels-style report
c) Set and change margins and line spacing
d) Set and change printer options | E |
| 15.2.4.7 | Do searches and sorts with a data base program. | E |
| 15.2.4.8 | Save, delete, copy, and rename data base files. | E |
| 15.2.4.9 | Use the documentation for a data base program. | E |

15.2.5 SPREADSHEET.

- | | | |
|----------|---|---|
| 15.2.5.1 | Identify characteristics and functions of spreadsheet programs. | E |
| 15.2.5.2 | Identify (determine) computer capabilities and peripherals necessary to use a specific spreadsheet program. | I |
| 15.2.5.3 | Identify examples of spreadsheet applications. | E |

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

		Type of Instruction*
15.2.5.4	Plan and create a worksheet with a spreadsheet program. a) Move cursor to make entries b) Use labels as entries c) Use values as entries d) Use formulas as entries e) Replicate and copy entries	E
15.2.5.5	Edit a worksheet with a spreadsheet program. a) Insert and delete rows and columns b) Change entries c) Move columns and rows d) Calculate new values	E
15.2.5.6	Print reports with a spreadsheet program. a) Determine information to include b) Determine width of report c) Set and change margins and spacing d) Set and change printer options	E
15.2.5.7	Save, delete, copy, and rename spreadsheet files.	E
15.2.5.8	Use the documentation for a spreadsheet program.	E
15.4.2	IMPACTS AND LEGAL ISSUES RELATED TO COMPUTER TECHNOLOGY.	
15.4.2.1	Identify ways of using computers which do not neglect or violate the rights of others.	R
15.4.2.2	Describe the advantages and disadvantages of using computers.	R
15.4.2.3	Describe the legal and ethical uses of computers.	R
15.4.3	COMPUTER APPLICATIONS IN VARIETY OF FIELDS.	
15.4.3.1	Describe career and vocational applications of computers.	E
15.4.3.2	Describe home and school applications of computers.	E

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

		<u>Type of Instruction*</u>
15.4.3.3	Describe recreational applications of computers.	E
15.4.4	ATTITUDES TOWARD COMPUTERS AND COMPUTER APPLICATIONS.	
15.4.4.2	Display positive attitudes toward computers and computer applications.	R
15.4.5	PROJECTED CHANGES.	
15.4.5.3	Describes latests developments related to computer technology.	R

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

SCOPE
FOR
BASIC 1

Anchorage School District
Division of Instruction
Curriculum Development Department

July 1985

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NUMBERING OF GOALS AND OBJECTIVES

To facilitate identification of goals and objectives, each curriculum area has been assigned a number:

Science	2
Social Studies	3
Mathematics	4
Language Arts/Reading	5

Goal numbers are identified by a two-part code. Goal 2.3 refers to Science, third goal; 4.1 refers to Mathematics, first goal, etc.

Program objectives are identified by a three-part code number. Example:

5.2.3 refers to Language Arts/Reading, second goal, third program objective.

4.1.2 refers to Mathematics, first goal, second program objective.

Instructional objectives are identified by a four-part code number. Example:

3.1.5.2 refers to Social Studies, first goal, fifth program objective, second instructional objective.

INSTRUCTION SYMBOLS

Each objective has been assigned a letter which represents the type of instruction which is to take place.

<u>Symbol</u>	<u>Definition</u>
I	The skills, knowledge and/or values related to the objective are first introduced into the instructional program at this level.
E	The skills, knowledge and/or values related to the objective are expanded to provide students new insights and/or broader applications.
R	The skills, knowledge and/or values related to the objective are reviewed and reinforced at this level.

COMPUTER EDUCATION

PROGRAM STATEMENT

Computer skills are essential for every individual in today's technological society. Everyone needs to have the knowledge, skills, and attitudes that will enable them to effectively utilize computers. The Computer Instructional Program of the Anchorage School District will provide the opportunity for all students to learn to use computers and to develop positive attitudes, values, and motivation toward computers and their applications as appropriate for each individual's age, needs, and desires.

PROGRAM PHILOSOPHY

The Anchorage School District supports the belief that:

1. Computer skills should be integrated throughout the curriculum.
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4. Computers should be used by teachers to teach and/or demonstrate selected skills and concepts, to assist with record keeping and the generation of classroom materials, and to assist with diagnosis and evaluation of student learning.
5. Computers should be used to teach problem solving skills and other computer related skills such as word processing, data processing, information retrieval, business and personal finance, and programming.
6. The Computer Instructional Program needs to be viewed as a flexible program due to rapidly changing technology.

PROGRAM GOALS

- 15.1 The student is able to understand and use the vocabulary, definitions, and procedures associated with computers, their operation, and the operation of their peripherals as appropriate to needs and interests.
- 15.2 The student is able to associate computers with appropriate areas of application, effectively select and utilize application software, and apply this knowledge in solving problems.
- 15.3 The student is able to understand the nature and purpose of computer languages and programming, to develop and write computer programs as appropriate to needs and interest, and to apply this knowledge in solving problems.
- 15.4 The student is familiar with the development of computing devices; is aware of the impact of technology on society; is aware of career, vocational, home, and recreational uses of computers; displays positive attitudes towards computers; and understands the emerging roles of computers and their effective use in a changing society.

ANCHORAGE SCHOOL DISTRICT
CATALOG OF COURSE DESCRIPTIONS

8520
Course Number

Grades 9-12

BASIC 1
Course Title

9-12
Grade Level

1 Semester
Length of Course

Prerequisites

Computer Fundamentals or its equivalent or consent of instructor.

Course Description

BASIC 1 includes program design, syntax of BASIC, the use of loops, arrays, and subroutines, and low resolution graphics.

BASIC 1
COURSE OUTLINE

1. Hardware and Operating Systems
 - A. Components and functions of a computer system (i.e., computer, monitor, disk drive)
 - B. Peripherals (i.e., printer, modem)
 - C. Operating systems (i.e., DOS, ProDOS, CPM)
 - D. Care and handling of hardware and software
2. Introduction to BASIC
 - A. Purpose of programming languages (i.e., telling the computer what to do).
 - B. Requirements for a BASIC program (i.e., statements, line numbers, END statement)
 - C. Entering programs
 - D. System commands (RUN, LIST)
 - E. Interrupting/stopping programs
 - F. Storing and retrieving programs (LOAD, SAVE)
3. Program Design
 - A. Planning the program (purpose, desired output, necessary input)
 - B. Designing the program (steps needed to get from input to output)
 - 1) Flowcharting
 - 2) Structured programming
 - 3) Modular programming
 - 4) Top-down programming
 - C. Documenting the program (REM statements, supporting materials)
 - D. Coding the program (writing the program in BASIC)
 - E. Debugging the program (finding coding, logic, and typing errors)
4. Arithmetic Operations
 - A. Addition (+), subtraction (-), multiplication (*), division (/), exponentiation (^)
 - B. Order of operations

- C. Parentheses in computations
- D. Numeric variables
- E. Rounding
- 5. Input/Output
 - A. LET statements
 - B. INPUT statements
 - C. READ and DATA statements
 - D. PRINT statements
 - E. TAB, VTAB, HTAB statements
 - F. HOME and CLS commands
 - G. Use of commas and semicolons to control output
 - H. Printer commands
- 6. Conditional and Unconditional Statements
 - A. GOTO statements
 - B. IF ... THEN statements
 - C. Equal (=), less than (<), greater than (>), less than or equal to (<=), greater than or equal to (>=), not equal to (<>) conditions
- 7. Looping
 - A. FOR ... NEXT statements
 - B. REPEAT ... UNTIL statements
 - C. WHILE ... DO statements
- 8. Built-in Functions
 - A. STEP function
 - B. INT function
 - C. RND function
 - D. SQR function

- 9. One Dimensional Arrays
 - A. Subscripted variables
 - B. DIM statements
- 10. String Variables
 - A. String variable names
 - B. String functions (LEFT\$, RIGHT\$, MID\$, LEN)
- 11. Subroutines
- 12. Introduction to Graphics

COMPUTER EDUCATION OBJECTIVES: BASIC 1

Type of
Instruction*

15.1.1 COMPUTER TERMINOLOGY.

- | | | |
|----------|---|---|
| 15.1.1.1 | Understand and use hardware terms such as computer, monitor, disk drive, terminal, printer, and keyboard. | R |
| 15.1.1.2 | Understand and use terms for components and parts such as memory, input, output, and slot. | R |
| 15.1.1.3 | Understand and use operation terms such as cursor, boot, and menu. | |
| 15.1.1.4 | Understand and use software terms such as disk, program, and documentation. | R |
| 15.1.1.5 | Understand and use firmware terms such as 80 column card and extended 80 column card. | E |

15.1.2 FUNCTIONS OF MAJOR COMPONENTS OF COMPUTERS.

- | | | |
|----------|--|---|
| 15.1.2.1 | Understand the purposes and functions of the computers memory, random access memory (RAM), read only memory (ROM), central processing unit (CPU), arithmetic logic unit (ALU). | R |
| 15.1.2.2 | Understand the functions of and be able to use input and output devices such as the keyboard, monitor, disk drive, printer, modem. | E |
| 15.1.2.3 | Understand the functions of and be able to use a floppy disk as a storage device. | E |

15.1.3 CARE AND HANDLING OF COMPUTER HARDWARE AND SOFTWARE.

- | | | |
|----------|---|---|
| 15.1.3.1 | Handle and store disks in an appropriate fashion. | R |
| 15.1.3.2 | Use the keyboard in an appropriate fashion. | R |
| 15.1.3.3 | Use the computer in an appropriate fashion. | R |
| 15.1.3.4 | Use peripheral devices in an appropriate fashion. | R |

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

		<u>Type of Instruction*</u>
15.1.4	OPERATE A COMPUTER.	
15.1.4.1	Turn a system on and off, boot a disk.	R
15.1.4.2	Run programs from a menu, catalog, or directory.	R
15.1.4.3	Break out of a program; interrupt or stop a program during execution.	E
15.1.4.4	Use keyboarding skills.	R
15.1.4.5	Troubleshoot common hardware and software problems.	E
15.1.4.6	Recognize need for hardware-software compatibility.	R
15.1.4.7	Locate and use appropriate information in operating manuals.	E
15.1.5	PERIPHERAL DEVICES.	
15.1.5.1	Use input devices such as keyboard and modem.	E
15.1.5.2	Use output devices such as printer and modem.	E
15.2.1	AREAS OF COMPUTER APPLICATIONS.	
15.2.1.1	Identify areas of computer applications such as information processing, storage and retrieval of information, simulation and modeling, process control, and decision making.	E
15.2.1.2	Identify characteristics of appropriate applications of computers such as need for speed, accuracy, repetitiveness, or volume of information.	E
15.2.1.3	Identify limiting considerations for use of computers such as cost, software availability, storage capacity, or computer capability.	E

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

- | | | |
|----------|---|---|
| 15.3.2 | NATURE AND PURPOSES OF COMPUTER LANGUAGES AND PROGRAMMING. | |
| 15.3.2.1 | Describe the purpose of computer languages. | E |
| 15.3.2.2 | Describe the purpose of computer programs. | E |
| 15.3.2.3 | Describe the relationship between a computer program and its output. | E |
| 15.3.2.4 | Discriminate between the purposes and characteristics of different kinds of programming languages (i.e., machine code and assembly level languages, business oriented languages, scientific/numeric oriented languages, structured programming languages, authoring languages). | I |
| 15.3.3 | PROGRAMMING (BASIC). | |
| 15.3.3.1 | Be familiar with the BASIC programming language. | E |
| | a) Identify the requirements for a program written in BASIC | |
| | b) Enter and run BASIC programs from the keyboard | |
| | c) Understand and use system commands for BASIC | |
| | d) Interrupt and stop programs during execution | |
| | e) Store and retrieve programs | |
| | f) Understand and use syntax of BASIC | |
| | g) Understand and use semantics of BASIC | |
| 15.3.3.2 | Identify and use basic programming procedures (flowcharting, structured programming, modular programming, top-down programming, bottom-up programming). | E |
| | a) Plan the program (define the problem; describe the purpose, desired output, and necessary input for the program) | |
| | b) Design the program (develop the algorithm, describe the steps needed to get from input to output) | |
| | c) Code the program (write the program in BASIC) | |

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

- d) Document the program (REM statements, supporting materials)
- e) Debug the program (find and correct coding, logic, and typing errors)
- 15.3.3.3 Write programs which include arithmetic operations. E
 - a) Use addition (+), subtraction (-), multiplication (*), division (/), and exponentiation (^)
 - b) Understand and use algebraic order of operations
 - c) Use parentheses in computations
 - d) Understand and use numeric variables
 - e) Round numbers to specified number of places
- 15.3.3.4 Write programs in BASIC which include input/output commands and statements; format input and output. E
- 15.3.3.5 Write programs which include conditional and unconditional statements. E
 - b) Understand and use GOTO statements
 - c) Understand and use IF ... THEN statements
 - d) Understand and use IF ... THEN ... ELSE statements
 - e) Understand and use the relational operators = (is equal to), <> (is not equal to), < = (is less than or equal to), > = (is greater than or equal to), < (is less than), and > (is greater than)
- 15.3.3.6 Write programs which include loops. E
 - a) Understand and use FOR ... NEXT statements
 - c) Understand and use REPEAT ... UNTIL statements
 - d) Understand and use WHILE ... DO statements
- 15.3.3.7 Write programs which utilize the built-in functions of the computer or programming language. E

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

		Type of Instruction*
15.3.3.9	Write programs which include the use of arrays. a) Understand and use one dimensional arrays c) Understand and use subscripted variables	I
15.3.3.10	Write programs which include the manipulation of character strings and the use of string variables. a) Understand and use string variables c) Understand and use string functions (LEFT\$, RIGHT\$, MID\$, LEN)	E
15.3.3.11	Write programs which include the use of subroutines.	E
15.3.3.14	Write programs which include the use of graphics.	E
15.4.2	IMPACTS AND LEGAL ASPECTS RELATED TO COMPUTER TECHNOLOGY.	
15.4.2.1	Identify ways of using computers which do not neglect or violate the rights of others.	R
15.4.2.2	Describe the advantages and disadvantages of using computers.	R
15.4.2.3	Describe legal and ethical uses of computers.	R
15.4.4	ATTITUDES TOWARD COMPUTERS AND COMPUTER APPLICATIONS.	
15.4.4.2	Display positive attitudes toward computers and computer applications.	R
15.4.5	PROJECTED CHANGES.	
15.4.5.1	Describes the latest developments in the uses of robots.	R
15.4.5.3	Describes latests developments in other computer related technologies.	R

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

SCOPE
FOR
BASIC 2

Anchorage School District
Division of Instruction
Curriculum Development Department

July 1985

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NUMBERING OF GOALS AND OBJECTIVES

To facilitate identification of goals and objectives, each curriculum area has been assigned a number:

Science	2
Social Studies	3
Mathematics	4
Language Arts/Reading	5

Goal numbers are identified by a two-part code. Goal 2.3 refers to Science, third goal; 4.1 refers to Mathematics, first goal, etc.

Program objectives are identified by a three-part code number. Example:

5.2.3 refers to Language Arts/Reading, second goal, third program objective.

4.1.2 refers to Mathematics, first goal, second program objective.

Instructional objectives are identified by a four-part code number. Example:

3.1.5.2 refers to Social Studies, first goal, fifth program objective, second instructional objective.

INSTRUCTION SYMBOLS

Each objective has been assigned a letter which represents the type of instruction which is to take place.

<u>Symbol</u>	<u>Definition</u>
I	The skills, knowledge and/or values related to the objective are first introduced into the instructional program at this level.
E	The skills, knowledge and/or values related to the objective are expanded to provide students new insights and/or broader applications.
R	The skills, knowledge and/or values related to the objective are reviewed and reinforced at this level.

COMPUTER EDUCATION

PROGRAM STATEMENT

Computer skills are essential for every individual in today's technological society. Everyone needs to have the knowledge, skills, and attitudes that will enable them to effectively utilize computers. The Computer Instructional Program of the Anchorage School District will provide the opportunity for all students to learn to use computers and to develop positive attitudes, values, and motivation toward computers and their applications as appropriate for each individual's age, needs, and desires.

PROGRAM PHILOSOPHY

The Anchorage School District supports the belief that:

1. Computer skills should be integrated throughout the curriculum.
2. Computers should be used by students for both guided and independent practice.
3. Computers should be used by students to reinforce and extend the skills and concepts taught in the classroom.
4. Computers should be used by teachers to teach and/or demonstrate selected skills and concepts, to assist with record keeping and the generation of classroom materials, and to assist with diagnosis and evaluation of student learning.
5. Computers should be used to teach problem solving skills and other computer related skills such as word processing, data processing, information retrieval, business and personal finance, and programming.
6. The Computer Instructional Program needs to be viewed as a flexible program due to rapidly changing technology.

PROGRAM GOALS

- 15.1 The student is able to understand and use the vocabulary, definitions, and procedures associated with computers, their operation, and the operation of their peripherals as appropriate to needs and interests.
- 15.2 The student is able to associate computers with appropriate areas of application, effectively select and utilize application software, and apply this knowledge in solving problems.
- 15.3 The student is able to understand the nature and purpose of computer languages and programming, to develop and write computer programs as appropriate to needs and interest, and to apply this knowledge in solving problems.
- 15.4 The student is familiar with the development of computing devices; is aware of the impact of technology on society; is aware of career, vocational, home, and recreational uses of computers; displays positive attitudes towards computers; and understands the emerging roles of computers and their effective use in a changing society.

ANCHORAGE SCHOOL DISTRICT
CATALOG OF COURSE DESCRIPTIONS

8521
Course Number

Grades 9-12

BASIC 2
Course Title

9-12
Grade Level

1 Semester
Length of Course

Prerequisites

BASIC 1 or its equivalent or consent of instructor.

Course Description

BASIC 2 includes sorting algorithms, concepts of advanced character handling, sequential and random file manipulation, and high resolution graphics.

BASIC 2
COURSE OUTLINE

1. Review of Hardware and Operating Systems
 - A. Components and functions of a computer system (i.e., computer, monitor, disk drive)
 - B. Peripherals (i.e., printer, modem)
 - C. Operating systems (i.e., DOS, ProDOS, CPM)
 - D. Care and handling of hardware and software
2. Review of Programming procedures
 - A. Planning the program (purpose, desired output, necessary input)
 - B. Designing the program (steps needed to get from input to output)
 - a) Flowcharting
 - b) Structured programming
 - c) Modular programming
 - d) Top-down programming
 - C. Documenting the program (REM statements, supporting materials)
 - D. Coding the program (writing the program in BASIC)
 - E. Debugging the program (finding coding, logic, and typing errors)
3. Review of Conditional and Unconditional Statements
 - A. GOTO statements
 - B. IF ... THEN statements
 - C. Equal (=), less than (<), greater than (>), less than or equal to (<=), greater than or equal to (>=), not equal to (<>) conditions
4. Review of Loops
 - A. FOR ... NEXT statements
 - B. REPEAT ... UNTIL statements
 - C. WHILE ... DO statements

5. Review of Built-in Functions
 - A. STEP function
 - B. INT function
 - C. RND function
 - D. SQR function
6. Arrays
 - A. Review one-dimensional arrays
 - B. Multidimensional arrays
 - C. Subscripted variables
 - D. DIM statements
7. String Variables
 - A. Review string variable names
 - B. Review string functions (LEFT\$, RIGHT\$, MID\$, LEN)
 - C. More string functions (VAL, CHR\$, STR\$, ASCII)
 - D. Comparing string variables
8. Review subroutines
9. Sorting Algorithms
 - A. Bubble sort
 - B. Shell sort
10. Sequential Files
 - A. Creating sequential files
 - B. Reading sequential files
 - C. Appending sequential files
 - D. Searching sequential files
 - E. Sorting sequential files
 - F. Editing sequential files

- G. Deleting sequential files
 - H. Manipulating sequential files
 - I. EXEC command
11. Random Access Files
- A. Designating record lengths
 - B. Creating and adding records to random access files
 - C. Searching and sorting random access files
 - D. Editing random access files
 - E. Deleting random access files
 - F. Manipulating random access files
12. Graphics
- A. Review low-resolution graphics
 - B. Introduce high-resolution graphics

SCOPE
FOR
PASCAL 1

Anchorage School District
Division of Instruction
Curriculum Development Department

July 1985

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NUMBERING OF GOALS AND OBJECTIVES

To facilitate identification of goals and objectives, each curriculum area has been assigned a number:

Science	2
Social Studies	3
Mathematics	4
Language Arts/Reading	5

Goal numbers are identified by a two-part code. Goal 2.3 refers to Science, third goal; 4.1 refers to Mathematics, first goal, etc.

Program objectives are identified by a three-part code number. Example:

5.2.3 refers to Language Arts/Reading, second goal, third program objective.

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Instructional objectives are identified by a four-part code number. Example:

3.1.5.2 refers to Social Studies, first goal, fifth program objective, second instructional objective.

INSTRUCTION SYMBOLS

Each objective has been assigned a letter which represents the type of instruction which is to take place.

<u>Symbol</u>	<u>Definition</u>
I	The skills, knowledge and/or values related to the objective are first introduced into the instructional program at this level.
E	The skills, knowledge and/or values related to the objective are expanded to provide students new insights and/or broader applications.
R	The skills, knowledge and/or values related to the objective are reviewed and reinforced at this level.

COMPUTER EDUCATION

PROGRAM STATEMENT

Computer skills are essential for every individual in today's technological society. Everyone needs to have the knowledge, skills, and attitudes that will enable them to effectively utilize computers. The Computer Instructional Program of the Anchorage School District will provide the opportunity for all students to learn to use computers and to develop positive attitudes, values, and motivation toward computers and their applications as appropriate for each individual's age, needs, and desires.

PROGRAM PHILOSOPHY

The Anchorage School District supports the belief that:

1. Computer skills should be integrated throughout the curriculum.
2. Computers should be used by students for both guided and independent practice.
3. Computers should be used by students to reinforce and extend the skills and concepts taught in the classroom.
4. Computers should be used by teachers to teach and/or demonstrate selected skills and concepts, to assist with record keeping and the generation of classroom materials, and to assist with diagnosis and evaluation of student learning.
5. Computers should be used to teach problem solving skills and other computer related skills such as word processing, data processing, information retrieval, business and personal finance, and programming.
6. The Computer Instructional Program needs to be viewed as a flexible program due to rapidly changing technology.

PROGRAM GOALS

- 15.1 The student is able to understand and use the vocabulary, definitions, and procedures associated with computers, their operation, and the operation of their peripherals as appropriate to needs and interests.
- 15.2 The student is able to associate computers with appropriate areas of application, effectively select and utilize application software, and apply this knowledge in solving problems.
- 15.3 The student is able to understand the nature and purpose of computer languages and programming, to develop and write computer programs as appropriate to needs and interest, and to apply this knowledge in solving problems.
- 15.4 The student is familiar with the development of computing devices; is aware of the impact of technology on society; is aware of career, vocational, home, and recreational uses of computers; displays positive attitudes towards computers; and understands the emerging roles of computers and their effective use in a changing society.

ANCHORAGE SCHOOL DISTRICT
CATALOG OF COURSE DESCRIPTIONS

8522
Course Number

Grades 9-12

PASCAL 1
Course Title

10-12
Grade Level

1 Semester
Length of Course

Prerequisites

Algebra II or consent of instructor.

Course Description

PASCAL 1 includes uses of procedures, conditional statements, recursion and functions, and an introduction to data files and input-output control.

PASCAL 1
COURSE OUTLINE

1. Hardware and Operating Systems
 - A. Components and functions of a computer system (i.e., computer, monitor, disk drive)
 - B. Peripherals (i.e., printer, modem)
 - C. Operating systems (i.e., DOS, ProDOS, CPM)
 - D. Care and handling of hardware and software
2. Introduction to PASCAL
 - A. Purpose of programming languages (i.e., telling the computer what to do)
 - B. Requirements for a PASCAL program
 - C. Entering programs
 - D. System commands (EDITOR, FILER, COMMAND LINE)
 - E. Interrupting/stopping programs
 - F. Storing and retrieving programs
3. Program Design
 - A. Planning the program (purpose, desired output, necessary input)
 - B. Designing the program (steps needed to get from input to output)
 - 1) Flowcharting
 - 2) Structured programming
 - 3) Modular programming
 - 4) Top-down programming
 - C. Documenting the program
 - D. Coding the program (writing the program in PASCAL)
 - E. Debugging the program (finding coding, logic, and typing errors)

4. Arithmetic Operations
 - A. Addition (+), subtraction (-), multiplication (*), division (/), exponentiation (^)
 - B. Order of operations
 - C. Parentheses in computations
 - D. Numeric variables and numeric data types
5. Input/Output
 - A. Assignment statements
 - B. READ and READLN statements
 - C. WRITE and WRITELN statements
 - D. Printer commands
6. Boolean Expressions, Conditional and Unconditional Statements
 - A. Boolean expressions
 - B. IF ... THEN ... statements
 - C. Equal (=), less than (<), greater than (>), less than or equal to (<=), greater than or equal to (>=), not equal to (<>) conditions
7. Looping
 - A. FOR ... DO statements
 - B. REPEAT ... UNTIL statements
 - C. WHILE ... DO statements
8. Built-in Functions
9. Functions
 - A. Function declaration
 - B. Function call
10. String Variables and Character Data

- 11. Procedures
 - A. Procedure declaration
 - B. Procedure call
- 12. Recursion
- 13. Arrays
 - A. One-dimensional arrays
- 14. Text Files
 - A. Rewrite statements
 - B. Reset statements

COMPUTER EDUCATION OBJECTIVES: PASCAL 1

		Type of Instruction*
15.1.1	COMPUTER TERMINOLOGY.	
15.1.1.1	Understand and use hardware terms such as computer, monitor, disk drive, terminal, printer, and keyboard.	R
15.1.1.2	Understand and use terms for components and parts such as memory, input, output, and slot.	R
15.1.1.3	Understand and use operation terms such as cursor, boot, and menu.	R
15.1.1.4	Understand and use software terms such as disk, program, and documentation.	R
15.1.1.5	Understand and use firmware terms such as 80 column card and extended 80 column card.	E
15.1.2	FUNCTIONS OF MAJOR COMPONENTS OF COMPUTERS.	
15.1.2.1	Understand the purposes and functions of the computers memory, random access memory (RAM), read only memory (ROM), central processing unit (CPU), arithmetic logic unit (ALU).	R
15.1.2.2	Understand the functions of and be able to use input and output devices such as the keyboard, monitor, disk drive, printer, modem.	E
15.1.2.3	Understand the functions of and be able to use a floppy disk as a storage device.	E
15.1.3	CARE AND HANDLING OF COMPUTER HARDWARE AND SOFTWARE.	
15.1.3.1	Handle and store disks in an appropriate fashion.	R
15.1.3.2	Use the keyboard in an appropriate fashion.	R
15.1.3.3	Use the computer in an appropriate fashion.	R
15.1.3.4	Use peripheral devices in an appropriate fashion.	R

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

		Type of Instruction*
15.1.4	OPERATE A COMPUTER.	
15.1.4.2	Run programs from a menu, catalog, or directory.	E
15.1.4.3	Break out of a program; interrupt or stop a program during execution.	E
15.1.4.4	Use keyboarding skills.	R
15.1.4.5	Troubleshoot common hardware and software problems.	E
15.1.4.6	Identify compatible software, recognize need for hardware-software compatibility.	R
15.1.4.7	Locate and use appropriate information in operating manuals.	E
15.1.5	PERIPHERAL DEVICES.	
15.1.5.1	Use input devices such as keyboard and modem.	E
15.1.5.2	Use output devices such as printer and modem.	E
15.2.1	MAJOR AREAS OF COMPUTER APPLICATIONS.	
15.2.1.1	Identify areas of computer applications such as information processing, storage and retrieval of information, simulation and modeling, process control, and decision making.	E
15.2.1.2	Identify characteristics of appropriate applications of computers such as need for speed, accuracy, repetitiveness, or volume of information.	E
15.2.1.3	Identify limiting considerations for use of computers such as cost, software availability, storage capacity, or computer capability.	E
15.3.2	NATURE AND PURPOSES OF COMPUTER LANGUAGES AND PROGRAMMING.	
15.3.2.1	Describe the purpose of computer languages.	E

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

		<u>Type of Instruction*</u>
15.3.2.2	Describe the purpose of computer programs.	E
15.3.2.3	Describe the relationship between a computer program and its output.	E
15.3.2.4	Discriminate between the purposes and characteristics of different kinds of programming languages (i.e., machine code and assembly level languages, business oriented languages, scientific/numeric oriented languages, structured programming languages, authoring languages).	E
15.3.3	PROGRAMMING (PASCAL).	
15.3.3.1	Be familiar with the PASCAL programming languages.	E
	a) Identify the requirements for a program written in PASCAL	
	b) Enter and run PASCAL programs from the keyboard	
	c) Understand and use system commands for PASCAL	
	d) Interrupt and stop programs during execution	
	e) Store and retrieve programs	
	f) Understand and use syntax of PASCAL	
	g) Understand and use semantics of PASCAL	
15.3.3.2	Identify and use basic programming procedures (flowcharting, structured programming, modular programming, top-down programming, bottom-up programming).	E
	a) Plan the program (define the problem; describe the purpose, desired output, and necessary input for the program)	
	b) Design the program (develop the algorithm, describe the steps needed to get from input to output)	
	c) Code the program (write the program in PASCAL)	
	d) Document the program	
	e) Debug the program (find and correct coding, logic, and typing errors)	

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

15.3.3.3	Write programs which include arithmetic operations. a) Use addition (+), subtraction (-), multiplication (*), division (/), and exponentiation () b) Understand and use algebraic order of operations c) Use parentheses in computations d) Understand and use numeric variables and numeric data	E
15.3.3.4	Write programs which include input/output commands and statements; format input and output.	E
15.3.3.5	Write programs which include Boolean expression, conditional and unconditional statements. a) Construct Boolean expressions to evaluate a given condition c) Understand and use IF ... THEN statements d) Understand and use IF ... THEN ... ELSE statements e) Understand and use the relational operators = (is equal to), <> (is not equal to), <= (is less than or equal to), >= (is greater than or equal to), < (is less than), and > (is greater than) f) Understand and use the special operators AND, OR, and NOT.	E
15.3.3.6	Write programs which include loops. a) Understand and use FOR ... DO statements c) Understand and use REPEAT ... UNTIL statements d) Understand and use WHILE ... DO statements	E
15.3.3.7	Write programs which utilize the built-in functions of the computer or programming language.	E
15.3.3.8	Write programs which use programmer defined functions.	I

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

		<u>Type of Instruction*</u>
15.3.3.9	Write programs which include the use of arrays. a) Understand and use one dimensional arrays c) Understand and use subscripted variables	E
15.3.3.10	Write programs which include the manipulation of character strings and the use of string variables. a) Understand and use string variables b) Understand and use character data	E
15.3.3.11	Write programs which include the use of procedures.	E
15.3.3.12	Write programs which include the use of text files.	I
15.3.3.13	Write programs which include the use of recursions.	I
15.3.3.14	Write programs which include the use of graphics.	E
15.4.2	IMPACTS AND LEGAL ASPECTS OF COMPUTER TECHNOLOGY.	
15.4.2.1	Identify ways of using computers which do not neglect or violate the rights of others.	R
15.4.2.2	Describe the advantages and disadvantages of using computers.	R
15.4.2.3	Describe the legal and ethical uses of computers.	R
15.4.4	ATTITUDES TOWARD COMPUTERS AND COMPUTER APPLICATIONS.	
15.4.4.2	Display positive attitudes toward computers and computer applications.	R
15.4.5	PROJECTED CHANGES.	
15.4.5.1	Describes the latest developments in uses of robots.	R
15.4.5.3	Describes latests developments in other computer related technologies.	R

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

SCOPE
FOR
PASCAL 2

Anchorage School District
Division of Instruction
Curriculum Development Department

July 1985

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NUMBERING OF GOALS AND OBJECTIVES

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Science	2
Social Studies	3
Mathematics	4
Language Arts/Reading	5

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Instructional objectives are identified by a four-part code number. Example:

3.1.5.2 refers to Social Studies, first goal, fifth program objective, second instructional objective.

INSTRUCTION SYMBOLS

Each objective has been assigned a letter which represents the type of instruction which is to take place.

<u>Symbol</u>	<u>Definition</u>
I	The skills, knowledge and/or values related to the objective are first introduced into the instructional program at this level.
E	The skills, knowledge and/or values related to the objective are expanded to provide students new insights and/or broader applications.
R	The skills, knowledge and/or values related to the objective are reviewed and reinforced at this level.

COMPUTER EDUCATION

PROGRAM STATEMENT

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PROGRAM PHILOSOPHY

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5. Computers should be used to teach problem solving skills and other computer related skills such as word processing, data processing, information retrieval, business and personal finance, and programming.
6. The Computer Instructional Program needs to be viewed as a flexible program due to rapidly changing technology.

PROGRAM GOALS

- 15.1 The student is able to understand and use the vocabulary, definitions, and procedures associated with computers, their operation, and the operation of their peripherals as appropriate to needs and interests.
- 15.2 The student is able to associate computers with appropriate areas of application, effectively select and utilize application software, and apply this knowledge in solving problems.
- 15.3 The student is able to understand the nature and purpose of computer languages and programming, to develop and write computer programs as appropriate to needs and interest, and to apply this knowledge in solving problems.
- 15.4 The student is familiar with the development of computing devices; is aware of the impact of technology on society; is aware of career, vocational, home, and recreational uses of computers; displays positive attitudes towards computers; and understands the emerging roles of computers and their effective use in a changing society.

ANCHORAGE SCHOOL DISTRICT
CATALOG OF COURSE DESCRIPTIONS

8523
Course Number

Grades 9-12

PASCAL 2
Course Title

10-12
Grade Level

1 Semester
Length of Course

Prerequisites

Completion of PASCAL 1 with a "C" or better or consent of instructor.

Course Description

PASCAL 1 includes the use of arrays, records, and other techniques to allow for more detailed work with data files and input-output control. Students completing this course should be qualified to take the AP Computer Science Test.

PASCAL 2
COURSE OUTLINE

1. Review Program Design
 - A. Planning the program (purpose, desired output, necessary input)
 - B. Designing the program (steps needed to get from input to output)
 - a) Flowcharting
 - b) Structured programming
 - c) Modular programming
 - d) Top-down programming
 - C. Documenting the program
 - D. Coding the program (writing the program in PASCAL)
 - E. Debugging the program (finding coding, logic, and typing errors)
2. Review and Extend Input/Output
 - A. Assignment statements
 - B. READ and READLN statements
 - C. WRITE and WRITELN statements
 - D. Printer commands
3. Review Boolean Expressions, Conditional and Unconditional Statements
 - A. Boolean expressions
 - B. IF ... THEN statements
 - C. IF ... THEN ... ELSE statements
 - D. Equal (=), less than (<), greater than (>), less than or equal to, (<=), greater than or equal to (>=), not equal to (<>) conditions
4. Review of Loops
 - A. FOR ... DO statements
 - B. REPEAT ... UNTIL statements
 - C. WHILE ... DO statements

5. Review and Extend use of Built-in Functions
6. Review and Extend use of Functions
 - A. Function declarations
 - B. Function call
7. Review and Extend use of String Variables and Character Data
8. Review and Extend use of Procedures
 - A. Procedure declaration
 - B. Procedure call
9. Review and Extend use of Recursion
10. Data Structures
 - A. Multi-dimensional arrays
 - B. Pointers
 - C. Link list
 - D. Stacks
 - E. Queues
 - F. Binary trees
11. Data Files
 - A. Design records
 - B. Create and add records to data files
 - C. Search and sort data files
 - D. Edit data files
 - E. Delete data files
 - F. Manipulate data files

COMPUTER EDUCATION OBJECTIVES: PASCAL 2

Type of
Instruction*

- | | | |
|----------|--|---|
| 15.1.1 | COMPUTER TERMINOLOGY. | |
| 15.1.1.1 | Understand and use hardware terms such as computer, monitor, disk drive, terminal, printer, and keyboard. | R |
| 15.1.1.2 | Understand and use terms for components and parts such as memory, input, output, and slot. | R |
| 15.1.1.3 | Understand and use operation terms such as cursor, boot, and menu. | R |
| 15.1.1.4 | Understand and use software terms such as disk, program, and documentation. | R |
| 15.1.1.5 | Understand and use firmware terms such as 80 column card and extended 80 column card. | R |
| 15.1.2 | FUNCTIONS OF MAJOR COMPONENTS OF COMPUTERS. | |
| 15.1.2.2 | Understand the functions of and be able to use input and output devices such as the keyboard, monitor, disk drive, printer, modem. | E |
| 15.1.2.3 | Understand the functions of and be able to use a floppy disk as a storage device. | R |
| 15.1.3 | CARE AND HANDLING OF COMPUTER HARDWARE AND SOFTWARE. | |
| 15.1.3.1 | Handle and store disks in an appropriate fashion. | R |
| 15.1.3.2 | Use the keyboard in an appropriate fashion. | R |
| 15.1.3.3 | Use the computer in an appropriate fashion. | R |
| 15.1.3.4 | Use peripheral devices in an appropriate fashion. | R |

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

		<u>Type of Instruction*</u>
15.1.4	OPERATE A COMPUTER.	
15.1.4.2	Run programs from a menu, catalog, or directory.	R
15.1.4.4	Use keyboarding skills.	R
15.1.4.5	Troubleshoot common hardware and software problems.	R
15.1.4.7	Locate and use appropriate information in operating manuals.	E
15.1.5	PERIPHERAL DEVICES.	
15.1.5.1	Use input devices such as keyboard and modem.	R
15.1.5.2	Use output devices such as printer and modem.	R
15.2.1	MAJOR AREAS OF COMPUTER APPLICATIONS.	
15.2.1.1	Identify areas of computer applications such as information processing, storage and retrieval of information, simulation and modeling, process control, and decision making.	R
15.2.1.2	Identify characteristics of appropriate applications of computers such as need for speed, accuracy, repetitiveness, or volume of information.	R
15.2.1.3	Identify limiting considerations for use of computers such as cost, software availability, storage capacity, or computer capability.	R
15.3.2	NATURE AND PURPOSES OF COMPUTER LANGUAGES AND PROGRAMMING.	
15.3.2.1	Describe the purpose of computer languages.	R
15.3.2.2	Describe the purpose of computer programs.	R
15.3.2.3	Describe the relationship between a computer program and its output.	R

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

Type of
Instruction*

- | | | |
|------------------------------|--|---|
| 15.3.2.4 | Discriminate between the purposes and characteristics of different kinds of programming languages (i.e., machine code and assembly level languages, business oriented languages, scientific/numeric oriented languages, structured programming languages, authoring languages). | E |
| 15.3.3 PROGRAMMING (PASCAL). | | |
| 15.3.3.1 | Be familiar with PASCAL programming language.
a) Identify the requirements for a program written in PASCAL
c) Understand and use system commands for PASCAL
f) Understand and use syntax of PASCAL
g) Understand and use semantics of PASCAL | E |
| 15.3.3.2 | Identify and use basic programming procedures (flowcharting, structured programming, modular programming, top-down programming, bottom-up programming).
a) Plan the program (define the problem; describe the purpose, desired output, and necessary input for the program)
b) Design the program (develop the algorithm, describe the steps needed to get from input to output)
c) Code the program (write the program in PASCAL)
d) Document the program
e) Debug the program (find and correct coding, logic, and typing errors) | E |
| 15.3.3.3 | Write programs which include arithmetic operations. | R |
| 15.3.3.4 | Write programs which include input/output commands and statements; format input and output. | E |

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

	Type of Instruction*
15.3.3.5 Write programs which include Boolean expression, conditional and unconditional statements.	E
a) Construct Boolean expressions to evaluate a given condition	
c) Understand and use IF ... THEN statements	
d) Understand and use IF ... THEN ... ELSE statements	
e) Understand and use the relational operators = (is equal to), <> (is not equal to), < = (is less than or equal to), > = (is greater than or equal to), < (is less than), and > (is greater than)	
f) Understand and use the special operators AND, OR, and NOT.	
15.3.3.6 Write programs which include loops.	E
a) Understand and use FOR ... DO statements	
c) Understand and use REPEAT ... UNTIL statements	
d) Understand and use WHILE ... DO statements	
15.3.3.7 Write programs which utilize the built-in functions of the computer or programming language.	E
15.3.3.8 Write programs which use programmer defined functions.	E
15.3.3.9 Use appropriate data types and data structures writing programs.	E
b) Understand and use arrays	
c) Understand and use subscripted variables	
d) Understand and use pointers	
e) Understand and use stacks	
f) Understand and use queues	
g) Understand and use binary trees	
h) Understand and use linked lists	
15.3.3.10 Write programs which include the manipulation of character strings and the use of string variables.	E
a) Understand and use string variables	
b) Understand and use character data	

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

		Type of Instruction*
15.3.3.11	Write programs which include the use of procedures.	E
15.3.3.12	Write programs which include the use of data files. a) Design records b) Create and add records to data files c) Search and sort data files d) Edit data files e) Delete data files f) Manipulate data files	E
15.3.3.13	Write programs which include the use of recursions.	E
15.4.2	IMPACTS AND ETHICAL ISSUES RELATED TO COMPUTER TECHNOLOGY.	
15.4.2.1	Identify ways of using computers which do not neglect or violate the rights of others.	R
15.4.2.2	Describe the advantages and disadvantages of using computers.	R
15.4.2.3	Describe the legal and ethical uses of computers.	R
15.4.4	ATTITUDES TOWARD COMPUTERS AND COMPUTER APPLICATIONS.	
15.4.4.2	Display positive attitudes toward computers and computer applications.	R
15.4.5	PROJECTED CHANGES.	
15.4.5.1	Describes the latest developments in uses of robots.	R
15.4.5.3	Describes latests developments in other computer related technologies.	R

* Instruction Code: I = Introduce; E = Expand; R = Reinforce

15.0 COMPUTER EDUCATION CURRICULUM SCOPE AND SEQUENCE

15.1 The student is able to understand and use the vocabulary, definitions, and procedures associated with computers, their operation, and the operation of their peripherals as appropriate to needs and interest.

											K	MP	1	2	3	4	5	6	INTRO	INTRO	COMPU	INFOR	BASIC	BASIC	PASCA	PASCA
15.1.1	THE STUDENT IS ABLE TO UNDERSTAND AND USE COMPUTER TERMINOLOGY RELATED TO THE PARTS AND OPERATION OF COMPUTERS AND THEIR PERIPHERALS.										I	R	R	R	E	E	E	E	E	R	R	E	E	R	E	R
15.1.1.1	Understand and use hardware terms such as computer, monitor, disk drive, terminal, printer, and keyboard.										I	R	R	R	R	R	R	E	R	R	R	R	R	R	R	
15.1.1.2	Understand and use terms for components and parts such as memory, input, output, and slot.										I	R	R	R	E	R	E	R	R	R	R	R	R	R	R	
15.1.1.3	Understand and use operation terms such as cursor, boot, menu, and catalog.										I	R	R	R	R	R	R	R	E	R	R	R	R	R	R	R
15.1.1.4	Understand and use software terms such as disk, program, and documentation.										I	R	R	R	R	E	R	R	R	R	R	R	R	R	R	R
15.1.1.5	Understand and use firmware terms such as 80 column card and extended 80 column card.																I	R	R	R	R	E	E	R	E	R
15.1.1.6	Identify different types of computers (i.e., main frame, mini, micro, analog, digital).																		I	R	R					

Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

15.0 COMPUTER EDUCATION CURRICULUM SCOPE AND SEQUENCE

15.1 The student is able to understand and use the vocabulary, definitions, and procedures associated with computers, their operation, and the operation of their peripherals as appropriate to needs and interest.

		K	HP	1	2	3	4	5	6	INTRO TO COMPUTERS	INTRO TO PROGRAMMING	COMPUTER FUNDAMENTALS	INFORMATION PROCESSING	BASIC 1	BASIC 2	PASCAL 1	PASCAL 2
15.1.2	THE STUDENT IS ABLE TO IDENTIFY THE FUNCTIONS OF THE MAJOR COMPONENTS OF COMPUTERS.					I	R	E	R	R	R	R	R	E	E	E	E
15.1.2.1	Understand the purposes and functions of the computers memory, random access memory (RAM), read only memory (ROM), central processing unit (CPU), arithmetic logic unit (ALU).							I	R	R	R	R		R	R	R	
15.1.2.2	Understand the functions of and be able to use input and output devices such as the keyboard, monitor, disk drive, printer, modem.					I	R	R	R	E	R	R	E	E	E	E	E
15.1.2.3	Understand the functions of and be able to use a floppy disk as a storage device.					I	R	R	R	E	R	R	E	E	R	E	R
15.1.3	THE STUDENT DEMONSTRATES PROPER CARE AND HANDLING OF COMPUTER HARDWARE AND SOFTWARE.	I	R	R	R	E	R	R	R	R	R	R	R	R	R	R	R
15.1.3.1	Handle and store disks in an appropriate fashion.	I	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
15.1.3.2	Use the keyboard in an appropriate fashion.	I	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
15.1.3.3	Use the computer in an appropriate fashion.	I	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
15.1.3.4	Use peripheral devices in an appropriate fashion.	I	R	R	R	E	R	R	R	R	R	R	R	R	R	R	R

Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

15.0 COMPUTER EDUCATION CURRICULUM SCOPE AND SEQUENCE

15.1 The student is able to understand and use the vocabulary, definitions, and procedures associated with computers, their operation, and the operation of their peripherals as appropriate to needs and interest.

		K	MP	1	2	3	4	5	6	INTRO TO COMPUTERS	INTRO TO PROGRAMMING	COMPUTER FUNDAMENTALS	INFORMATION PROCESSING	BASIC 1	BASIC 2	PASCAL 1	PASCAL 2
15.1.4	THE STUDENT IS ABLE TO OPERATE A COMPUTER.	I	E	E	E	E	E	E	E	E	R	E	E	E	E	E	E
15.1.4.1	Turn a system on and off, boot a disk.	I	R	R	R	R	R	R	R	R	R	R	R	R	R		
15.1.4.2	Run programs from a menu, catalog, or directory.	I	R	R	R	R	R	R	R	E	E	R	R	R		E	R
15.1.4.3	Break out of a program; interrupt or stop a program during execution.	I	R	E	E	R	R	E	E	R	E	R	E	E		E	
15.1.4.4	Use keyboarding skills.	I	E	E	E	E	E	E	E	E	R	E	R	R	R	R	R
15.1.4.5	Troubleshoot common hardware and software problems.			I	E	E	E	E	R	E	E	R	E	E	R	E	R
15.1.4.6	Identify compatible software, recognize need for hardware-software compatibility.						I	E	R	R	R	R	R		R		
15.1.4.7	Locate and use appropriate information in operating manuals.							I	E	E	E	R	E	E	E	E	E
15.1.5	THE STUDENT IS ABLE TO USE PERIPHERAL DEVICES.	I	E	E	E	E	R	R	E	R	E	R	E	E	R	E	R
15.1.5.1	Use a variety of input devices (i.e., modem, voice, light pen, graphics pad, keyboard).	I	E	E	E	E	R	R	E	R	E	R	E	E	R	E	R
15.1.5.2	Use a variety of output devices (i.e., printer, modem, synthesizer).	I	E	E	E	E	R	R	E	R	E	R	E	E	R	E	R
15.1.5.3	Use robotic devices.	I	E	E	E	E	R	R	E	R	E	R					

Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

15.0 COMPUTER EDUCATION CURRICULUM SCOPE AND SEQUENCE

15.2 The student is able to relate computers with appropriate areas of application, effectively select and utilize application software, and apply this knowledge in solving problems.

										INTRO TO COMPUTERS	INTRO TO PROGRAMMING	COMPUTER FUNDAMENTALS	INFORMATION PROCESSING	BASIC 1	BASIC 2	PASCAL 1	PASCAL 2
										K	MP	1	2	3	4	5	6
15.2.1	THE STUDENT IS ABLE TO IDENTIFY THE MAJOR AREAS OF COMPUTER APPLICATIONS, CHARACTERISTICS OF APPROPRIATE APPLICATIONS FOR COMPUTERS, AND LIMITING CONSIDERATIONS FOR USE OF COMPUTERS.									I	E	R	E	E	R	E	R
15.2.1.1	Identify areas of computer applications such as information processing, storage and retrieval of information, simulation and modeling, process control, and decision making.									I	E	R	E	E	R	E	R
15.2.1.2	Identify characteristics of appropriate applications of computers such as need for speed, accuracy, repetitiveness, or volume of information.									I	E	R	E	E	R	E	R
15.2.1.3	Identify limiting considerations for use of computers such as cost, software availability, storage capacity, or computer capability.									I	E	R	E	E	R	E	R
15.2.2	THE STUDENT IS ABLE TO IDENTIFY AND USE PROCEDURES FOR LOCATING AND SELECTING PRE-EXISTING SOFTWARE IN ORDER TO SOLVE SPECIFIC PROBLEMS.									I	E	E	E				
15.2.2.1	Identify characteristics of good software.											I	E				
15.2.2.2	Identify software sources.											I	E				
15.2.2.3	Identify appropriate software to use for a specific application or problem.									I	E	R	E				

Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

15.0 COMPUTER EDUCATION CURRICULUM SCOPE AND SEQUENCE

15.2 The student is able to relate computers with appropriate areas of application, effectively select and utilize application software, and apply this knowledge in solving problems.

		K	HP	1	2	3	4	5	6	INTRO TO COMPUTERS	INTRO TO PROGRAMMING	COMPUTER FUNDAMENTALS	INFORMATION PROCESSING	BASIC 1	BASIC 2	PASCAL 1	PASCAL 2
15.2.3	THE STUDENT IS ABLE TO SELECT AND USE A WORD PROCESSING PROGRAM.				I	E	E	E	E	E	E	E	E				
15.2.3.1	Identify characteristics and functions of word processing programs.									I	E		E				
15.2.3.2	Identify (determines) computer capabilities and peripherals necessary to use a specific word processing program.												I				
15.2.3.3	Identify examples of word processing applications.											I	E				
15.2.3.4	Use a word processing program to create and print a document.				I	E	E	E	E	E	E	R	E				
15.2.3.5	Use a word processing program to edit a document.					I	E	E	E	E	E		E				
15.2.3.6	Use a word processing program to format a document.					I	E	E	E	E	E		E				
15.2.3.7	Use a word processing program to perform searches and to make replacements.					I	E	E	E	E	E		E				
15.2.3.8	Save, delete, copy, and rename word processing files.					I	E	E	E	E	E		E				
15.2.3.9	Use the documentation for a word processing program.									I	E		E				

Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

15.0 COMPUTER EDUCATION CURRICULUM SCOPE AND SEQUENCE

15.2 The student is able to relate computers with appropriate areas of application, effectively select and utilize application software, and apply this knowledge in solving problems.

		K	HP	1	2	3	4	5	6	INTRO TO COMPUTERS	INTRO TO PROGRAMMING	COMPUTER FUNDAMENTALS	INFORMATION PROCESSING	BASIC 1	BASIC 2	PASCAL 1	PASCAL 2
15.2.4	THE STUDENT IS ABLE TO SELECT AND USE A DATA BASE PROGRAM.					I	E	E	E	E	R	R	E				
15.2.4.1	Identify characteristics and functions of data base programs.								I	E	R		E				
15.2.4.2	Identify (determine) computer capabilities and peripherals necessary to use a specific data base program.												I				
15.2.4.3	Identify examples of data base program applications.					I	E	E	E	E	R	R	E				
15.2.4.4	Create a data base file.					I	E	E	E	E	R	R	E				
15.2.4.5	Edit a data base file.					I	E	E	E	E	R		E				
15.2.4.6	Format and print reports with a data base program.					I	E	E	E	E	R	R	E				
15.2.4.7	Do searches and sorts with a data base program.					I	E	E	E	E	R	R	E				
15.2.4.8	Save, delete, copy, and rename data base files.					I	E	E	E	E	R		E				
15.2.4.9	Use the documentation for a data base program.									I	R		E				

Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

15.0 COMPUTER EDUCATION CURRICULUM SCOPE AND SEQUENCE

15.2 The student is able to relate computers with appropriate areas of application, effectively select and utilize application software, and apply this knowledge in solving problems.

		K	MP	1	2	3	4	5	6	INTRO TO COMPUTERS	INTRO TO PROGRAMMING	COMPUTER FUNDAMENTALS	INFORMATION PROCESSING	BASIC 1	BASIC 2	PASCAL 1	PASCAL 2
15.2.5	THE STUDENT IS ABLE TO SELECT AND USE A SPREADSHEET PROGRAM.							I	E	E	R	R	E				
15.2.5.1	Identify characteristics and functions of spreadsheet programs.									I			E				
15.2.5.2	Identify (determine) computer capabilities and peripherals necessary to use a specific spreadsheet program.												I				
15.2.5.3	Identify examples of spreadsheet applications.								I	E	R	R	E				
15.2.5.4	Plan and create a worksheet with a spreadsheet program.							I	E	E	R	R	E				
15.2.5.5	Edit a worksheet with a spreadsheet program.							I	E	E	R		E				
15.2.5.6	Print reports with a spreadsheet program.							I	E	E	R	R	E				
15.2.5.7	Save, delete, copy, and rename spreadsheet files.							I	E	E	R		E				
15.2.5.8	Use the documentation for a spreadsheet program.									I	R		E				
15.2.6	THE STUDENT IS ABLE TO USE UTILITY PROGRAMS IN ORDER TO SOLVE SPECIFIC PROBLEMS.						I	E	E			R					
15.2.6.1	Use puzzle, poster, or sign generator programs (i.e., Print Shop, The Newsroom, Crossword Magic, MECC Puzzles and Posters).						I	E	E			R					

Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

15.0 COMPUTER EDUCATION CURRICULUM SCOPE AND SEQUENCE

15.3 The student is able to understand the nature and purpose of computer language and programming, develop and write computer programs as appropriate to needs and interests, and apply this knowledge in solving problems.

	K	MP	1	2	3	4	5	6	INTRO TO COMPUTERS	INTRO TO PROGRAMMING	COMPUTER FUNDAMENTALS	INFORMATION PROCESSING	BASIC 1	BASIC 2	PASCAL 1	PASCAL 2
15.3.1 THE STUDENT IS ABLE TO USE A COMPUTER IN AN INTERACTIVE MODE TO DEVELOP PROBLEM SOLVING SKILLS.	I	E	E	E	R	E	E	E								
15.3.1.1 Use introductory graphics programs (i.e., Delta Drawing, MECC Pictures, E-Z Logo).	I	E	E	E	R	R										
15.3.1.2 Use programming readiness programs (i.e., Face Maker, Creature Creator, Muggles).	I	E	E	E	R	R										
15.3.1.3 Use word processing readiness programs (i.e., Story Machine, Kids on Keys, Magic Slate, Kid Word).	I	E	E													
15.3.1.4 Use thinking skills programs (i.e., Rocky's Boots, Gertrude's Puzzles, Factory).	I	E	E	E	R	E	E	E								
15.3.2 THE STUDENT IS ABLE TO DESCRIBE THE NATURE AND PURPOSES OF COMPUTER LANGUAGES AND PROGRAMMING.							I	R	E	E	R		E	E	E	E
15.3.2.1 Describe the purpose of computer languages.									I	E	R		E	R	E	R
15.3.2.2 Describe the purpose of computer programs.							I	R	E	E	R		E	R	E	R
15.3.2.3 Describe the relationship between a computer program and its output.							I	R	E	E	R		E	R	E	R
15.3.2.4 Discriminate between the purposes and characteristics of different kinds of programming languages (i.e., machine code and assembly level languages, business oriented languages, scientific/numeric oriented languages, structured programming languages, authoring languages).													I	E	E	E

Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

15.0 COMPUTER EDUCATION CURRICULUM SCOPE AND SEQUENCE

15.3 The student is able to understand the nature and purpose of computer language and programming, develop and write computer programs as appropriate to needs and interests, and apply this knowledge in solving problems.

	K	MP	1	2	3	4	5	6	INTRO TO COMPUTERS	INTRO TO PROGRAMMING	COMPUTER FUNDAMENTALS	INFORMATION PROCESSING	BASIC 1	BASIC 2	PASCAL 1	PASCAL 2
15.3.3 THE STUDENT IS ABLE TO DEVELOP AND CODE WELL-ORGANIZED PROGRAMS IN A COMPUTER LANGUAGE IN ORDER TO SOLVE PROBLEMS.							0	0	I	E	I		E	E	E	E
15.3.3.1 Be familiar with a programming language.							0	0	I	E	I		E	E	E	E
a) Identify the requirements for a program in the language.																
b) Enter and run programs from the keyboard.																
c) Understand and use system commands for the language.																
d) Interrupt and stop programs during execution.																
e) Store and retrieve programs.																
f) Understand and use the syntax of the language.																
g) Understand and use the semantics of the language.																

Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

15.0 COMPUTER EDUCATION CURRICULUM SCOPE AND SEQUENCE

15.3 The student is able to understand the nature and purpose of computer language and programming, develop and write computer programs as appropriate to needs and interests, and apply this knowledge in solving problems.

											K	MP	1	2	3	4	5	6	INTRO	INTRO	COMPL	INFO	BASIC	BASIC	PASCA	PASCA	
15.3.3.2 Identify and use basic programming procedures (flowcharting, structured programming, modular programming, top-down programming, bottom-up programming).																				I				E	E	E	E
a) Plan the program (define the problem; describe the purpose, desired output, and necessary input for the program).																											
b) Design the program (develop the algorithm, describe the steps needed to get from input to output).																											
c) Code the program (write the program).																											
d) Document the program (REM statements, supporting materials).																											
e) Debug the program (find and correct coding, logic, and typing errors).																											

Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

15.0 COMPUTER EDUCATION CURRICULUM SCOPE AND SEQUENCE

15.3 The student is able to understand the nature and purpose of computer language and programming, develop and write computer programs as appropriate to needs and interests, and apply this knowledge in solving problems.

		K	MP	1	2	3	4	5	6	INTRO TO COMPUTERS	INTRO TO PROGRAMMING	COMPUTER FUNDAMENTALS	INFORMATION PROCESSING	BASIC 1	BASIC 2	PASCAL 1	PASCAL 2
15.3.3.3	Write programs which include arithmetic operations.							0	0	I	E	I	E	R	E	R	
	a) Use addition (+), subtraction (-), multiplication (*), division (/), and exponentiation (^).																
	b) Understand and use algebraic order of operations.																
	c) Use parentheses in computations.																
	d) Understand and use different types of numeric variables and numeric data.																
	e) Round numbers to specified number of places.																
15.3.3.4	Write programs which include input/output commands and statements; format input and output.							0	0	I	E	I	E	E	E	E	

Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

15.0 COMPUTER EDUCATION CURRICULUM SCOPE AND SEQUENCE

15.3 The student is able to understand the nature and purpose of computer language and programming, develop and write computer programs as appropriate to needs and interests, and apply this knowledge in solving problems.

	K	MP	1	2	3	4	5	6	INTRO TO COMPUTERS	INTRO TO PROGRAMMING	COMPUTER FUNDAMENTALS	INFORMATION PROCESSING	BASIC 1	BASIC 2	PASCAL 1	PASCAL 2
15.3.3.5 Write programs which include Boolean expressions, conditional and unconditional statements.							0	0	I	I	E	E	E	E		
a) Construct Boolean expressions to evaluate a given condition.																
b) Understand and use GOTO statements.																
c) Understand and use IF ... THEN statements.																
d) Understand and use IF ... THEN ... ELSE statements.																
e) Understand and use relational operators = (is equal to), <> (is not equal to), <= (is less than or equal to), >= (is greater than or equal to), < (is less than, and > (is greater than).																
f) Understand and use the special operators AND, OR, and NOT.																

Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

15.0 COMPUTER EDUCATION CURRICULUM SCOPE AND SEQUENCE

15.3 The student is able to understand the nature and purpose of computer language and programming, develop and write computer programs as appropriate to needs and interests, and apply this knowledge in solving problems.

		K	HP	1	2	3	4	5	6	INTRO TO COMPUTERS	INTRO TO PROGRAMMING	COMPUTER FUNDAMENTALS	INFORMATION PROCESSING	BASIC 1	BASIC 2	PASCAL 1	PASCAL 2
15.3.3.6	Write programs which include loops.							0	0	I	E	I		E	E	E	E
	a) Understand and use FOR ... NEXT and FOR ... DO statements.																
	b) Understand and use REPEAT command.																
	c) Understand and use REPEAT ... UNTIL statements.																
	d) Understand and use WHILE ... DO statements.																
15.3.3.7	Write programs which utilize the built-in functions of the computer or programming language.										I	I		E	E	E	E
15.3.3.8	Write programs which use programmer defined functions.														I	I	E

Instruction Code: I = Introduce; E = Expand; R = Reinforce; O = Optional

15.0 COMPUTER EDUCATION CURRICULUM SCOPE AND SEQUENCE

- 15.3 The student is able to understand the nature and purpose of computer language and programming, develop and write computer programs as appropriate to needs and interests, and apply this knowledge in solving problems.

	K	HP	1	2	3	4	5	6	INTRO TO COMPUTERS	INTRO TO PROGRAMMING	COMPUTER FUNDAMENTALS	INFORMATION PROCESSING	BASIC 1	BASIC 2	PASCAL 1	PASCAL 2
15.3.3.9 Use appropriate data types and data structures when writing programs.													I	E	E	E
a) Understand and use one dimensional arrays.																
b) Understand and use multi-dimensional arrays.																
c) Understand and use subscripted variables.																
d) Understand and use pointers.																
e) Understand and use stacks.																
f) Understand and use queues.																
g) Understand and use binary trees.																
h) Understand and use linked lists.																
15.3.3.10 Write programs which include the manipulation of character strings and the use of string variables.								0	0	I	E	I	E	E	E	E
a) Understand and use string variables.																
b) Understand and use character data.																
c) Understand and use string functions.																

Instruction Code: I = Introduce; E = Expand; R = Reinforce; 0 = Optional

15.0 COMPUTER EDUCATION CURRICULUM SCOPE AND SEQUENCE

15.3 The student is able to understand the nature and purpose of computer language and programming, develop and write computer programs as appropriate to needs and interests, and apply this knowledge in solving problems.

	K	MP	1	2	3	4	5	6	INTRO TO COMPUTERS	INTRO TO PROGRAMMING	COMPUTER FUNDAMENTALS	INFORMATION PROCESSING	BASIC 1	BASIC 2	PASCAL 1	PASCAL 2
15.3.3.11 Write programs which include the use of subroutines and/or procedures.							0	0	I	I	E	E	E	E		
15.3.3.12 Write programs which include the use and manipulation of data files.													I	I	E	
15.3.3.13 Write programs which include the use of recursion.									I					I	E	
15.3.3.14 Write programs which include the use of graphics.							0	0	I	E	I	E	E	E		

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15.0 COMPUTER EDUCATION CURRICULUM SCOPE AND SEQUENCE

15.4 The student is familiar with the historic development of computing devices; is aware of the impact of technology on society; is aware of career, vocational, home, and recreational uses of computers; displays positive attitudes towards computers; and understands emerging roles of computers and their effective use in a changing society.

	K	HP	1	2	3	4	5	6		INTRO TO COMPUTERS	INTRO TO PROGRAMMING	COMPUTER FUNDAMENTALS	INFORMATION PROCESSING	BASIC 1	BASIC 2	PASCAL 1	PASCAL 2
15.4.1 THE STUDENT IS FAMILIAR WITH THE HISTORIC DEVELOPMENT OF COMPUTING DEVICES.								I	E	R	R						
15.4.1.1 Aware of devices for manipulating numbers (i.e., abacus, slide rule).								I			R						
15.4.1.2 Aware of computing machines (i.e., calculator, adding machine, cash register).								I			R						
15.4.1.3 Aware of significant technological advances leading to different generations of computers (i.e., vacuum tubes, transistors, integrated circuits, silicon chips).								I	E	R	R						
15.4.2 THE STUDENT IS ABLE TO DISCUSS POSITIVE AND NEGATIVE IMPACTS OF COMPUTER TECHNOLOGY ON SOCIETY AND THE LEGAL ASPECTS OF USING IT.	I	R	R	R	E	R	R	R	R	R	R	R	R	R	R	R	R
15.4.2.1 Identify ways of using computers which do not neglect or violate the rights of others.	I	R	R	R	E	R	R	R	R	R	R	R	R	R	R	R	R
15.4.2.2 Describe the advantages and disadvantages of using computers.	I	R	R	R	E	R	R	R	R	R	R	R	R	R	R	R	R
15.4.2.3 Describe the legal and ethical uses of computers.					I	R	R	R	R	R	R	R	R	R	R	R	R

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15.0 COMPUTER EDUCATION CURRICULUM SCOPE AND SEQUENCE

15.4 The student is familiar with the historic development of computing devices; is aware of the impact of technology on society; is aware of career, vocational, home, and recreational uses of computers; displays positive attitudes towards computers; and understands emerging roles of computers and their effective use in a changing society.

	K	HP	1	2	3	4	5	6		INTRO TO COMPUTERS	INTRO TO PROGRAMMING	COMPUTER FUNDAMENTALS	INFORMATION PROCESSING	BASIC 1	BASIC 2	PASCAL 1	PASCAL 2
15.4.3 THE STUDENT IS ABLE TO DESCRIBE COMPUTER APPLICATIONS IN A VARIETY OF FIELDS.								I	E	E	R	E					
15.4.3.1 Describe career and vocational applications of computers.								I	E	E	R	E					
15.4.3.2 Describe home and school applications of computers.								I	E	E	R	E					
15.4.3.3 Describe recreational applications of computers.								I	E	E	R	E					
15.4.4 THE STUDENT WILL DISPLAY POSITIVE ATTITUDES TOWARDS COMPUTERS AND COMPUTER APPLICATIONS.	I	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
15.4.4.1 Identify feelings about using the computer and reasons for those feelings.	I	R	R	R								R					
15.4.4.2 Display positive attitudes towards computers and computer application.					R	R	R	R	R	R	R	R	R	R	R	R	R

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15.0 COMPUTER EDUCATION CURRICULUM SCOPE AND SEQUENCE

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	K	MP	1	2	3	4	5	6	INTRO TO COMPUTERS	INTRO TO PROGRAMMING	COMPUTER FUNDAMENTALS	INFORMATION PROCESSING	BASIC 1	BASIC 2	PASCAL 1	PASCAL 2
15.4.5 THE STUDENT IS AWARE OF PROJECTED CHANGES THAT MAY RESULT FROM TECHNOLOGICAL ADVANCES.								I	E	R	R	R	R	R	R	R
15.4.5.1 Describes the latest developments in uses of robots.								I	E	R	R		R	R	R	R
15.4.5.2 Describes latest developments in artificial intelligence.								I	R	R	R					
15.4.5.3 Describes latest developments in other computer related technologies.								I	E	R	R	R	R	R	R	R

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